DISSERTATION

INSTRUMENT DEVELOPMENT:

ASSESSING SOLUTIONS FOR MANAGING CHANGE

AND ORGANIZATIONAL READINESS

Submitted by

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School of Education

In partial fulfillment of the requirements

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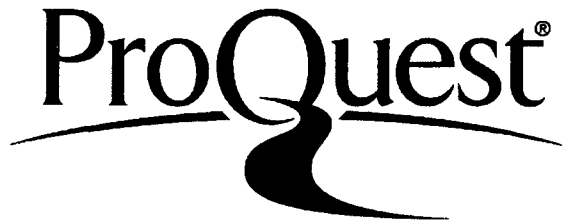

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY L. MELANIE CHASE ENTITLED ASSESSING SOLUTIONS FOR MANAGING CHANGE AND ORGANIZATIONAL READINESS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

ASSESSING SOLUTIONS FOR MANAGING CHANGE AND ORGANIZATIONAL READINESS

The accelerating pace of change and increasing global complexities require organizations to adapt, perhaps with the urgency of *change or die*. Managing organizational change to meet unprecedented demands requires shared focus, organization-wide competency in managing the process of change, and collective readiness for an efficient, proactive, and sustainable response. A solid readiness foundation or a distinct type of organizational culture or climate that is ready for change may become a matter of survival and a reflection of optimal performance for organizations today and into the future.

The purpose of this study was to develop quantitative measures for managing change and organizational readiness that incorporate principles of readiness (across individual, group, process, and organization levels) to ensure sustainable change. The Survey's primary aim is to build a readiness foundation with a diagnostic tool and guide for building organization-wide capacity for managing change. The final Solutions for Change and Organizational Readiness Survey instrument (Chase SCOR 8 Survey) consists of 44 items in 8 subscales, measures, practices, or *solutions*. The Survey developed for this research was

administered across the public health sector, with 223 participants from organizations as diverse as universities, county and state governments, professional associations, and non-profit organizations.

Analyses provided support for the reliability and validity of all 8 subscales in the Chase SCOR 8 Survey, including relationships with: (a) organizational readiness for change, (b) organizational performance, and (c) stereotype beliefs of women managers. Evidence of convergent validity was provided when the 8 subscales were confirmed to be positively related to: (a) organizational readiness for change using an established scale and (b) organizational performance. Evidence of discriminant validity was provided when the 8 subscales were confirmed to be unrelated to stereotype beliefs of women managers. Additionally, the 8 subscales or practices for managing change and organizational readiness combined to explain 21% to 28% of the variance in organizational readiness for change and organizational performance.

Accumulated evidence from the literature, instruments and expert reviews further supported the construct validity of the 8 subscales in the Chase SCOR 8 Survey. The dissertation includes a discussion of accumulated evidence, statistical findings, and suggestions for future research.

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I dedicate this research to those with the courage and discipline to focus on solutions for change in daily application and practice, with special acknowledgment to my long-time mentor and dear friend, Mike Kennelly, M.S., 5th degree Taekwondo black belt.

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CHAPTER 1: INTRODUCTION AND BACKGROUND

Organizations are complex "open systems" (Katz & Kahn, 1978) adapting or declining in the face of pressures to change. Three forces are commonly believed to be creating an accelerating pace of change for the workforce and for organizations: globalization, workforce demographics, and technology (Drucker, 1997; Gubman, 2004; Huyett & Viguerie, 2005; Judy & D'Amico, 1997; Karoly, 2004). Amid accelerating change and increasing complexity are a growing number of variables underlying the strategic and operational thinking that guide organizational change. Effectively managing change, building organizational readiness for change, and improving organizational performance are long-recognized management interests and, potentially could hold the key to winning the high stakes game of "change or die" (Beer & Nohria, 2000).

In light of selected research findings enumerated below, readiness is a significant variable in the organizational change game:

1. "The brutal fact is that about 70% of all change initiatives fail" (Beer & Nohria, 2000, p. 133).

2. Changes imposed on organizational members who were not "ready" usually failed (Spector, 1989).

3. Research with several hundred companies exploring why certain organizations were able to plan and implement change, and others not able to,

found that "the major determinant of success—alone explaining 20 percent of the variation in the problems experienced from one company to the next—was the amount of effort devoted to readying organizations in advance of change" (Redding & Catalanello, 1994, p. 51).

Findings by Redding and Catalanello among organizations with greater success in planning and implementing change include: (a) building a "constant state of readiness," where readiness activities are common, day-to-day operational practice; and (b) focusing less on "preparing to move in one specific direction or to adopt a single program and more on preparing for change in general" (1994, p. 52).

Grounded in Redding and Catalanello's findings (1994), the primary aim of assessing practices or solutions for managing change and organizational readiness with the Chase SCOR 8 Survey is to build a constant state of readiness (p. 52) or a readiness foundation as a distinct type of organizational culture or climate—one that is ready for change. Building a solid readiness foundation is an ongoing process of: (a) learning, individually and collectively; (b) establishing shared meaning and collective purpose for the change initiative(s), (c) building and evoking the capacity and resiliency to change within individuals and groups across the organization, (d) following proven change management practices, and (e) reinforcing or anchoring change with organization-wide policies, procedures, and other cultural levers. These processes enable transitions through resistance

to readiness, and through planning and successful implementation, to arrive at sustainable change anchored in a solid readiness foundation.

Organizational readiness for change is a combination of cultural dimensions, organizational learning, effectiveness, performance, and managing change. The conceptual framework for organizational readiness for change encompasses several perspectives beyond the cultural context. The framework was based on an extensive review of instruments that measure readiness for change quantitatively by Holt, Armenakis, Harris, and Feild (2007). The framework includes four measurement perspectives: the individual characteristics of employees/members related to change, the context of the change, the type or focus of change, and the process for change.

Change is commonly imposed on people in organizations as a management directive. Not surprisingly, the directive itself, whether it be a new strategic direction, product or service offering, etc., can be the point of resistance, particularly when people do not have the skills necessary to adjust to the change. By understanding solutions that contribute to managing change and organizational readiness, all employees can be empowered, working and learning together, maintaining some sense of control over managing the change, and ensuring its implementation success—regardless of the directive or change initiative type itself. With each change implementation success, the expectation of future success increases and vice versa. As expectancy theory informs us (Vroom, 1964), when expectations or perceptions are that an organization is not

capable of changing, based on past experience, employees adjust their efforts to match the perceived likelihood of a successful outcome. They may publicly declare their support, but they ultimately maintain control over their covert resistance, for example, with stalling or undermining behaviors.

Individual employees who resist change can further undermine change efforts through their influences across formal and informal social networks within the organization. Individuals comprise organizations, and their personal readiness for change and adaptation underlie organizational change. Without individual, personal change, organizational change is less likely to occur (Anderson & Anderson, 2001; Band, 1995; Steinburg, 1992).

In organizations, structure and culture shape values, beliefs, processes, and norms for acceptable behavior. Organization members in turn accept the roles, expectations, and resource allocations defined for people and groups. This process of social construction and culture creation is ongoing and shapes both organizations and individual member responses to each other; it also shapes how data and internal or external environmental drivers for change surface and mobilize a collective response. The hallmark of this process in relation to organizational change can be readiness not resistance, adaptation not rigidity.

Statement of the Problem

The problem is to reduce the likelihood of organizational change implementation failures. Comparable climate or culture assessments are not assessing practices for managing change that incorporate principles of readiness.

Comparable assessments reviewed aim to assess an ideal state for the organization's culture or climate that include certain management practices; they do not build capacity or understanding of how to make the transition and how to make the ideal state a sustainable reality. The Chase SCOR 8 Survey provides a how-to framework for building change management capacity by: (a) following four common change management steps and by (b) incorporating mutually reinforcing principles of readiness across individual, group, process, and organization levels. The usage of a pre-planning assessment as a diagnostic tool and guide for organizations in their planned change efforts can build organization-wide capacity for managing and adapting to change, lessen the likelihood of change implementation failures, and strengthen organizational performance amid accelerating change and complexity.

Background on the Problem

An organization's inability to effectively unfreeze and create broad readiness with employees before attempting a change initiative can be a common cause of change implementation failure, financial and psychological cost. Organizations commonly move into change implementation before individuals or groups are psychologically ready (Schein, 1988). While a planned change intervention sets some targeted ideal and striving toward that ideal, there is an inherent presumption of readiness, with open resistance typically denied or punished; however, resistance is a natural response to change of any kind and informs the timing and approach for change management. Ignoring

resistance, and imposing reorganized structures, threats, coercion, or other short-term pressures does not eradicate it from people's cognitions, intentions, or behaviors. The expression of resistance simply shifts from active to passive resistance.

Complex organizations are responding to a barrage of requirements to change according to a 1994 Gallup Organization Survey and a 1996 American Society for Training and Development (ASTD) National Human Resource Development Executives Survey (as cited in Preskill & Torres, 1999). Organizational change initiatives aim to improve performance, quality, market share, customer retention, etc. which are generally admirable intentions; however, many times organizations are bombarded with multiple change initiatives simultaneously, and effective change implementation after a management directive is an expectation not necessarily based on current realities, skills and preparedness of the workforce, resistance concerns, or readiness.

Change implementation is financially and psychologically costly for organizations. In a Harvard Business School review of change implementation costs, it was estimated that costs for Fortune 100 companies were on average one billion dollars between 1980 and 1995, (Jacobs, 1998; cited in Peach, Jimmieson, & White, 2005). For software change implementations, which are typically system-wide technological changes, problems cost U.S. companies and government agencies an estimated $145 billion annually according to Glass, 1998

(cited in Jiang, Klein, Hwang, Huang, & Hung, 2004). Change implementation failure with or without readiness is psychologically costly, increasing resistance, distrust, turnover, and the expectancy that future change initiatives are not going to be effectively implemented. The financial and psychological costs associated with failed change implementations can ostensibly be transparent but run quite deep in an organization's collective memory, limiting the potential for effective change in the future.

One solution to the problem under investigation was to integrate common change management practices with principles of readiness in a survey instrument comprised of carefully constructed items. The survey items and subscales constitute proven practices or solutions for managing change and organizational readiness.

Purpose of the Study

The purpose of this study was to develop a survey instrument for assessing practices or solutions for managing change and organizational readiness, with evidence of reliability and validity. An objective assessment provides a shared context and focus for learning how to strengthen and build a solid readiness foundation, based on proven change management practices and principles of readiness at the individual, group, process, and organization levels.

Assessing the gaps in change management practices that contribute to a strong readiness foundation, an ideal state, before undertaking change efforts holds promise for: (a) acknowledging the natural stage of resistance to change,

and utilizing a shared focus on solutions with the Chase SCOR 8 Survey to enable transitions; (b) informing and guiding the timing, approach, and management of change initiatives; (c) strengthening trust in the organization's capacity to change and manage implementation successfully; (d) reducing organizational change implementation failures and their financial and psychological costs, (e) building a distinct type of organizational culture that is responsive in adapting to accelerating demands from an increasingly complex external environment.

Initial constructs that incorporated principles of readiness at individual, group, process, and organization levels included: communication, external context/driver for change, initiating change, leadership support, tolerance of change, alignment, collaborative work culture, current use of data, learning orientation, treatment of customers/stakeholders, treatment of employees, and work unit health.

An objective assessment of the current state compared to an ideal is commonly conducted by organization development practitioners and researchers to guide organizational change efforts (Beer, 1980; Gilley & Maycunich, 2000; McNabb & Sepic, 1995; Moss Kanter, Stein & Jick, 1992). Approaching planned change based on the findings and gaps identified by an objective assessment is consistent with the premises and focus of organization development: "to improve the functioning of individuals, teams and the total organization; and to impart the necessary skills and knowledge that will enable organization members to continuously improve their functioning on their own" (French & Bell, 1995, p. 2).

Contribution to the Field of Study

The Solutions for Change and Organizational Readiness (SCOR) Survey adds a user-friendly instrument to the field for organization and human resource development researchers and practitioners. The ultimate aim of the Chase SCOR 8 Survey is to build a solid readiness foundation in the organization's culture. The Survey integrates change management steps with principles of readiness to build a readiness foundation or distinct type of organizational culture—a culture ready for change. Assessing proven practices or solutions for managing change and organizational readiness can enable an organization to more effectively: (a) manage change initiatives, (b) adapt to an accelerating pace of change, and (c) improve overall organizational performance. A standard measurement scale makes it easier to compare findings and examine other organizational phenomena across samples (Price & Mueller, 1986).

This assessment is consistent with other planned change efforts that start with an ideal state or standard toward which to strive. Findings or gaps identified in current practices for managing change and organizational readiness would be shared with internal stakeholders and used by internal and external organization development consultants or change agents.

Research Questions

There were two main research questions that guided this study:

1. What is the evidence for reliability of the Chase SCOR Survey subscales or possible predictors?

2. What is the evidence for validity of the Chase SCOR Survey subscales or possible predictors?

Evidence for validity was provided by examining relationships between the Chase SCOR Survey subscales or possible predictors and: (a) perceptions of organizational performance, (b) organizational readiness for change, and (c) stereotype beliefs of women managers.

The units of analysis for the purpose of this study were at the individual, group, process, and organization levels based on participants in the sample subjectively informing the researchers about their employer organizations' practices for managing change and organizational readiness. "Formal social organizations may also be the units of analysis in social scientific research; an example would be corporations, implying, of course, a population of corporations" (Babbie, 1992, p. 94).

Limitations and Assumptions

Identified limitations and assumptions of the study included:

1. Researcher bias based on the following assumptions: the use of an assessment is assumed to increase readiness awareness and understanding of practices for managing change and organizational readiness; different types of

employer organizations are assumed to vary in their practices for managing change and organizational readiness.

2. Observer bias is a possibility since a participant may not assess their organization objectively or accurately (Fraenkel & Wallen, 2000), but situationally and in the context of recent events. This is a persistent concern with organizational research.

Identified delimitations of the study included:

1. Constructs were limited in this study to those the researcher believed were within the organization's sphere of influence, as measured across subscales within the Chase SCOR 8 Survey instrument.

2. Variables of interest selected for inclusion in the study and hypothesized to be related to the Chase SCOR 8 subscales were organizational readiness for change (Eby, Adams, Russell, & Gaby, 2000) and perceptions of organizational performance. The Eby et al. scale was selected based on citation frequency in other research, and the organizational performance items were selected based on their non-financial, subjective assessment of performance (versus financial, objective assessments to which not all organization members have access).

3. The sample selected within the public health sector targeted organizations with members or stakeholders with certain job titles presumed to have job responsibilities in management, supervision, evaluation, planning, training process or performance improvement.

Despite these limitations, the study was considered a valuable undertaking for informing researchers and organizations about practices for managing change and organizational readiness.

CHAPTER 2: LITERATURE REVIEW

In this chapter, several complementary bodies of literature are reviewed for their implications in assessing practices for managing change and organizational readiness: readiness for change, organizational culture, organizational learning, organizational change, and lastly, planned change. Literature on organizational performance is also reviewed due to the interest in relationships with practices for managing change and organizational readiness. The chapter includes: (a) an introduction to the concept of readiness and implications for change success or failure, (b) definitions, (c) the conceptual framework that guides this Literature Review: individual characteristics, context of the change, content of the change, and process of the change; and (d) a summary of constructs identified from the literature that informed the Chase SCOR 8 Survey instrument design.

Introduction to the Concept of Readiness

The interest in readiness across an organization is predicated by the desires of management to be responsive to pressures from the external environment and to facilitate readiness and adaptability. "Readiness for organizational change involves the social phenomena of changing individual cognitions across a number of employees" (Armenakis, Harris, & Mossholder, 1993, p. 683). Readiness for change or "unfreezing" (Lewin, 1951) to create

readiness for change before attempting a change induction can make the difference between success or failure of organizational change initiatives (Redding & Catalanello, 1994; Schein, 1987, 1988; Spector, 1989).

The concept of readiness was first introduced by Jacobson, 1957 (as cited in Holt, Armenakis, Field, & Harris, 2007), and relates to the general orientation of an organization or individual toward change. Readiness is similar to Lewin's concept of unfreezing (1951) and the organization's capacity or adaptability to change. "Readiness is the cognitive precursor to the behaviors of either resistance to, or support for, a change effort" (Armenakis et al., 1993, p. 682). "It is not the crisis itself that unfreezes organizations. It is the inherent readiness of organizations to change" (Redding & Catalanello, 1994, p. 50). Openness to change is tantamount to employee readiness for organizational change (Armenakis et al., 1993).

Definitions of Readiness

Definitions of readiness for change include "willingness, motives and aims" (Beckhard & Harris, 1977), "the extent to which individuals are mentally, psychologically, or physically ready, prepared, or primed to participate in organization development activities" (Hanpachern, 1997, p. 11); and "the awareness of the need for change, the skills to make the required changes, and the commitment to putting changes into place" (Killing & Fry, 1990, p. 50; cited in Holt, 2002). Readiness for change can be defined as the extent to which employees perceive the need for organizational change as positive (i.e. change

acceptance), as well as the extent to which employees believe that such changes are likely to have positive implications for themselves and possibly the organization at large (Armenakis et al., 1993; Holt, 2002; Miller, Johnson, & Grau, 1994). Hultman defines readiness as "a state of mind that reflects receptivity or even a willingness to change the ways we think and behave. Readiness is manifested in either active initiation of change or cooperation with it" (1998, p. 95). *The Random House Unabridged Dictionary* (2006) defines readiness as the condition of being ready; ready movement, ready action, ease, facility.

Several change facilitating factors were identified from the literature and used as a basis for comparison and refinement of the initial 12 constructs, as outlined in Table 1.

Table 1

Readiness for Change Facilitating Factors & Initial SCOR Constructs

Initial Change Facilitating Factors	Refined List of Constructs for SCOR Survey Development	Initial List of Constructs for SCOR Survey Subscales in Field Test
Sponsorship (from an authority position)	Communication	Communication
Flexibility (in decision-making, structure, etc.)	Leadership support	External context
Open communication	Collaborative work culture	Initiating change
Motivation (i.e., a sense of urgency)	Communication	Leadership support
Operating climate dimensions of organization environment	Tolerance of change	Tolerance of change
Internal communication	External context/impetus for change	Alignment
Role clarity	Current use of data	Collaborative work culture
Supervisory support	Work unit health	Current use of data
Leadership	Expected yield from the planned change effort	Learning orientation
Systems and structures that support learning	(Beckhard & Pritchard, 1992; Bennis, Benne, & Chin, 1969; Bennis, 1969;	Treatment of customers/stakeholders
Evaluation	Burke, 1994; Fiol & Lyles, 1985; Galpin, 1996;	Treatment of employees
(Davis & Salasin, 1983; Kotter, 1995; McNabb & Sepic, 1995; Moravec, 1995; Pfeiffer & Jones, 1978; Preskill & Torres, 1999; Redding & Catalanello, 1994; Stewart, 1994)	Lewin, 1951; Pareek, 1988; Pheysey, 1993; Preskill & Torres, 1999; Porras, 1987; Senge, 1990; Schein, 1987, 2004)	Work unit health (See Appendix A for detail on the literature that informed the SCOR Survey constructs)

Conceptual Framework

The conceptual framework for the Literature Review encompassed four perspectives of readiness for change: (a) the individual characteristics of those involved in the change, (b) the context of the change (organization), (c) the content of the change (type of change), and (d) the process of the change (implementation approaches). This comprehensive measurement model was developed by Holt, Armenakis, Harris, and Feild (2007) based on an extensive review of 32 instruments that measure readiness for change quantitatively (lacking evidence of validity and reliability). Readiness for change is defined by the model as "influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., the circumstances under which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved (Holt, Armenakis, Field, & Harris, 2007, p. 235).

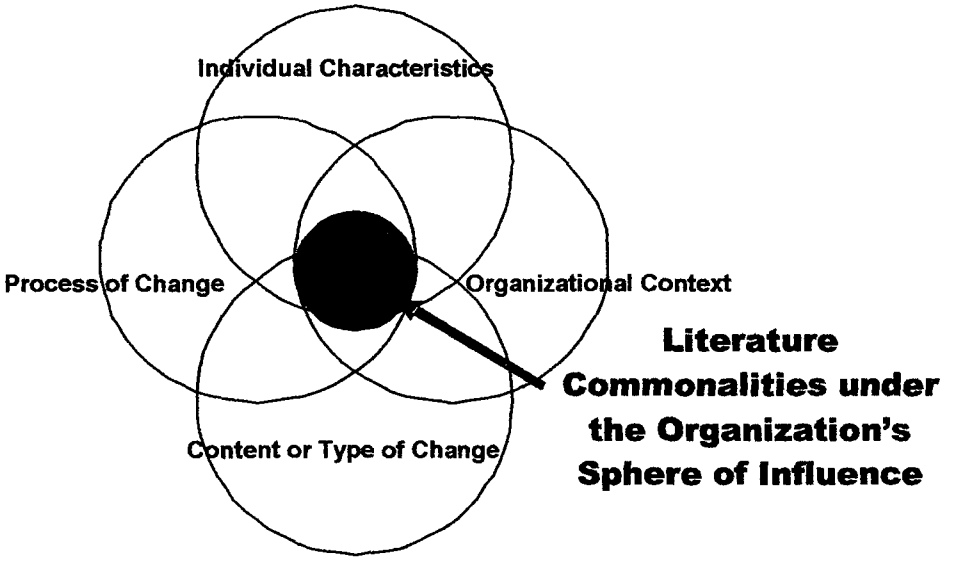

Figure 1. Conceptual framework and literature commonalities.

Figure 1 depicts the conceptual framework and literature commonalities identified across complementary bodies of research. The constructs in the Chase SCOR 8 Survey were identified from the literature as proven practices for managing change and principles of readiness considered to be within the organization's sphere of influence (see Appendix A).

Individual Characteristics

The individual characteristics of those involved in change is the first perspective in the conceptual framework followed for the Literature Review. The knowledge, skills, motivation, and abilities of individual employees are at the core of organizational performance and change--the human capital or human resources that enable organizations to accomplish what they do. Organizations constitute relations between interest groups based on relative power and status,

relative rewards, sanctions, and obligations. Relations form complex webs that generate specific interests, attitudes, and beliefs about their organization, about their change situation, and about their opportunities for advantage their relations provide (Carnall, C. A., 1986). Individual employees or stakeholders respond to what is happening in organizations by making assumptions and by trying to make sense of any change in terms of its implications for them personally, their roles, and their work. Organizational change can lead to feelings of anger, sadness, anxiety, denial, loss, and frustration (Spiker & Lesser, 1995; Sullivan & Guntzelman, 1991, cited in Bovey, 2001, p. 374). Employee attitudes toward a pending change can impact morale, productivity, and turnover intentions (McDonald & Siegal, 1993; Iacovini, 1993; McManus, et al., 1995; cited in Eby, et al., 2000, p. 420). Individual attitudes of those involved in change express through the cognitions, emotions, and behaviors seen in the faces of resistance: active, overt resistance, and passive, covert resistance. Three dimensions of the individual characteristics of those involved in change follow: (a) resistance to change, (b) individual differences in coping with change, and (c) transitioning through resistance.

Resistance to Change

Understanding Resistance

Employee resistance to change is a topic of considerable investigation in the literature, and it is the antithesis of readiness. Resistance is the most frequently cited problem encountered by management when implementing

change based on a longitudinal study of 500 large organizations by Waldersee and Griffiths (2004). Resistance to change is predictable since human beings commonly have a fear of uncertainty, or in the words of Wheatley "attempt to quell a disturbance when it first appears" (1992, p. 96). According to Tichy and Devanna, "resistance is the first reaction to change because people need time to assess the cost and benefits of the change to them" (1986, p. 74). Patterns of resistance or opposition may emerge when change disadvantages particular interest groups. "Faced with disadvantage, men appear either to set it aright, to withdraw from the situation, to avoid it, or to reduce their effort and emotional commitment in order to set the balance of reward and effort aright, as they see it" (Carnall, 1986, p. 753). Behavior indicative of resistance or readiness is evidenced by interaction patterns within the organization. Managers may name resistance as a problem, but understanding its root cause and what to do about it eludes many. Resistance needs to be acknowledged and its causes understood.

Conceptualizing Resistance

Conceptualizations of resistance typically come from the psychology literature. "Research reveals three different emphases in conceptualizations of resistance: as a cognitive state, an emotional state, and as a behavior" (Piderit, 2000, p. 785). Piderit highlights: (a) the importance of integrating all three emphases of resistance--cognitive, emotional and behavioral--for defining and measuring readiness for change, and (b) recommends that future research on

assessing readiness for change would benefit by considering it as a function of attitudes. Cognitions are the beliefs and thoughts that employees may have about a specific change event at work; emotions are expressed or suppressed in an attempt to cope with or avoid the implications of the change, e. g. anxiety, frustration or excitement; behaviors, however, are most revealing. The theory of reasoned action posits that attitudes predict intentions, which predict behaviors (Fishbein & Ajzen, 1975); therefore, it is vital "to understand how recipients perceive the change and how they experience it" (Moss Kanter et al., 1992, p. 380) before resistance is expressed in behavioral terms that others across the organization may emulate. Readiness for change is thought of in behavioral terms when following Lewin's (1951) early model of unfreezing, transitioning or moving, and refreezing. Behavioral responses span from: "resistance, opposition, acceptance but work to modify through local level accommodations, ritualistic response, acquiescence, to leaving the organization" (Carnall, 1986, p. 753-759).

Definitions of Resistance

Definitions and diagnoses of resistance add perspective to the range and depth of resistance to change. Individuals and different stakeholders have a myriad of reasons for resistance to organizational change. "Resistance is a response available to those who control no resources other than those they themselves provide; opposition is a response available to those with control over

resources relevant to the changes underway" (Carnall, 1986, p. 754). Table 2 outlines selected key contributors' definitions and diagnoses of resistance.

Table 2

Definitions and Diagnoses of Resistance

Definitions and Diagnoses of Resistance	Contributor
Hultman identified two categories of resistance behaviors: active and passive which underlie the beliefs that express as resistance (1998).	Hultman (1998, p.5)
Beliefs underlying employee support for or resistance to change include: (a) their needs are not being met currently, (b) the change will make it easier for them to meet their needs, (c) the benefits outweigh the risks, (d) the change is necessary to avoid or escape a harmful situation, (e) the change process is being handled properly, (f) the change will work, (g) the change is consistent with their values, (g) those responsible for the change can be trusted.	
Resistance can be possible as a consequence of employee perceptions of injustice and unfairness during times of change.	Kilbourne, O'Leary-Kelly, and Williams (1996, p. 32)
Resistance increases when employees are afraid they will lose something of value, if there are misconceptions about the nature and implications of a change, and if communication is infrequent or if there is little early employee participation in or tolerance of change.	Kotter and Schlessinger (1979, p. 110)
The Price Waterhouse Change Integration Team diagnose resistance to change by degree in the following situations: (a) perceived threat to job security, (b) loss of expertise, (c) need to learn new skills, (d) shifts in influence or authority or control, (e) shifts in communication patterns, (f) loss of social status, (g) change in habits/customs, (h) limited understanding of the change and its implications, (i) low tolerance of change.	Price Waterhouse Change Integration Team (1995, p. 23-24).

Table 2 *(continued)*

Definitions and Diagnoses of Resistance

Definitions and Diagnoses of Resistance	Contributor
Tichy and Devanna (1986) outline technical, political and cultural reasons for resistance to change. Technical reasons for resistance include: (a) habit and inertia, (b) fear of the unknown or loss of organizational predictability, (c) sunk cost associated with the organization's resources in the old way of doing things. Political reasons for resistance include: (a) threats to powerful coalitions, (b) zero-sum decision making resulting from limitations on resources, (c) the indictment of leadership problem, where leaders may have to acknowledge past mistakes or decisions made to bring about change. Cultural reasons for resistance include: (a) cultural filters resulting in selective perception, where the culture of an organization defines what people perceive as possible; (b) regression to the good old days, (c) lack of climate for change.	Tichy and Devanna (1986, p. 74-81).
Defined resistance as "behavior which is intended to protect an individual from the effects of real or imagined change." Outlined six primary reasons for resistance: (a) if the nature of the change is not made clear, (b) if the change is open to a wide variety of interpretations, (c) if those influenced feel strong forces deterring them from changing, (d) if people influenced by the change have pressure put on them to make it instead of having a say in the nature or the direction of the change, (e) if the change is made on personal grounds, (f) if the change ignores the already established institutions of the group	Zander (1950), (cited in Dent & Goldberg, 1999, p. 34-35)

Individual Differences in Coping with Change

Innate personality traits and learned responses based on past experiences underlie individuals' perceptions of the meaning of organizational change and their expressions of resistance or readiness. The organizational change literature supports the importance of self-esteem, perceived control, and optimism in coping with change (Wanberg & Banas, 2000; Taylor & Brown, 1988; Miller et al., 1994; Ashford, 1988; Lau & Woodman, 1995). Cognitive adaptation theory identifies that individual differences facilitate coping, general content and adjustment during stressful experiences (Taylor & Brown, 1988).

The implications are that individuals with these traits are more likely to be receptive than resistant to organizational change. "An individual who perceives him or herself as adapting easily to change may be more receptive to organizational change efforts and be more likely to view the organization's readiness for change as favorable" (Eby et al., 2000, p. 425). Employees with lower levels of anxiety may also be more willing to participate in organizational changes than those with higher levels of anxiety (Miller et al., 1994). Whether an individual possesses certain adaptiveness traits or not, some period of psychological transition is necessary to move to the next state.

Transitioning through Resistance

Transitioning through resistance involves identifying and acknowledging it as a predictable stage in the process of psychological adjustment to change. Transition is a necessary precursor that enables adaptation to the new state. A cognitive state called "(un)readiness" precedes the behaviors of either resistance to or support for a change effort, according to Armenakis et al. (1993, p. 681-682). Bridges (1991) asserts that people are resisting the transition that has to be made in order to accommodate the change. "Transition is the psychological process people go through to come to terms with the new situation. Change is external, transition is internal. Unless transition occurs, change will not work. Transition is the ending that you will have to make to leave the old situation behind" (1991, p. 3-4).

Several scholars describe the change process as starting with denial. Scott and Jaffe (1988) describe the individual change process as consisting of four phases: initial denial, resistance, gradual exploration, and eventual commitment. Kubler Ross' five stages of grief model--denial, anger, bargaining, depression, to acceptance--are also transferable to personal change and emotional upset resulting from factors other than death and dying, including organizational or job changes (Chapman, 2006). Carnall (1986, p. 112) calls the individual change process a "coping cycle," which is "inevitable, and each organizational unit must go through it." There are five stages in the cycle: denial, defense, discarding, adaptation, and internalization.

Even during times of positive or constructive changes, something has to be released to make way for the new. "Starts involve new situations. Beginnings involve new understandings, new values, new attitudes and most of all, new identities" (Morgan, 1997, p. 50). Change hinges on questions of identity or organizational role, according to Morgan. The organization influences readiness and reduces resistance through "the energy, inspiration and support it elicits with employee affiliations to it, roles it ascribes, and through the activities of internal change agents" (Armenakis et al., 1993, p. 683). According to Tichy and Devanna, "People must be given a way to work out the psychodynamics of closing off what has been, working through a transition period, and taking up new beginnings" (1986, p. 60).

Matching appropriate therapeutic processes to the stages of change can be a way to work through individual and group resistance to facilitate transitions. Prochaska and DiClemente (1983) suggest this matching in a psychotherapy setting, and which can be applied in other settings as well. Five stages of change are identified as follows: (a) "Pre-contemplation:" individual is either not aware or is ignoring the problem, (b) "contemplation:" individual is beginning to be aware that a problem exists and is struggling to understand it, (c) "decision making:" individual has decided he or she is ready to change and has committed to it, is ready to take responsibility, (d) "action:" individual has actively started to change the behavior or the environment, (e) "maintenance:" the individual has made some progress, but may be slipping.

Matching organization development interventions to the stages of change for different stakeholder groups can also be a way to work through individual, group, or organizational transitions. Individuals, sub-groups, workgroups, and departments are the fundamental sources of change resistance or readiness, and interventions that target multiple sources can be mutually supportive and reinforcing. The theory of transitional phenomena supports that assertion by providing insight into the need for: (a) the organization to create some transitional phenomena which allows for a releasing of the current way ("time to reflect, think over, feel out and mull through action") and transition to the new way; and (b) individuals in situations of voluntary change to be in control of the process (Morgan, 1997, p. 238).

Change resistance in individuals and groups can reveal underlying psychological reasons and forces for resistance such as: (a) intergroup conflict over competing goals, (b) competition for scarce resources (Cox 1993, as cited in Ott, 1996), and (c) conflict with an outgroup that increases internal cohesion within the group (Sherif, et al., 1961, as cited in Ott, 1996). Individual perceptions can shape group perceptions, and their importance cannot be overstated. Conversely, group social norms influence individual perceptions, motivations and behaviors, expectations and meanings about change, as well as the causes, conditions, and consequences of competition on behavior within and among groups (Blake & Mouton, 1961; Sherif, 1961; as cited in Ott, 1996).

Table 3 describes some of the forces affecting individual behavior in organizations.

Table 3

Forces Affecting Individual Behavior in Organizations **(cited by Ott,1996)**

Force	Contributors
Attitudes and behaviors shaped by *group pressure*	Asche, 1951; Janis, 1971
Group norms—the standards they develop are shared and enforced by members of groups	Cohen, Fink, Gadon & Willits, 1988; Feldman, 1984; Roy, 1960
Particular blending of social and technical aspects of the work tasks—the *socio-technical systems*	Thorsrud, 1968; Trist, 1960; Trist & Bamforth, 1951
Organizational culture	Ott, 1989; Schein, 1992; Whyte, 1956

Understanding individual characteristics, the causes and types of resistance, individual differences in coping with change, and the psychological need for transition are considerations for managing change and organizational readiness.

Context of the Change

Organizational culture or the context of the change is the second perspective in the conceptual framework followed for the Literature Review. Understanding culture or the context of the change provides perspective on the learned consequences of operating within a particular organization's social environment. Individual cognitions, collective norms, and learning are threads in the fabric of an organization's culture or the context of the change. According to Connor and Lake (1988), understanding organizational culture provides insight into resistant forces, areas of culture to change, the most appropriate organization development interventions to use for change, and effective change implementation. The culture of an organization can shape organizational learning, and individual and collective readiness. Three dimensions of the context of change follow: (a) culture, (b) organizational learning, and (c) the contextual factors that increase readiness.

Culture

The culture of an organization sets the context for change because of its power to shape behavior, "not so much by forcing it as by encouraging it" (Moss Kanter et al., 1992, p. 11). Schein (1985) suggests culture to be a key determinant in the ability of an organization to carry out its mission and to accept and integrate change. Culture can establish supporting or undermining

mechanisms for aligning goals or dis-aligning throughout organizing structures, policies, and sanctions.

Culture constitutes the work setting of an organization, with implications for managing change, organizational readiness, and performance. The connection between culture and change requires that proposed changes pass through a "cultural screen" in order to implement and embed changes across an organization (Galpin, 1996). Galpin suggests that changes in operations, systems, procedures, and other elements must be connected to and embedded in an organization's culture. This cultural screen identifies all the elements that can be leveraged to strengthen readiness, implementation, and the sustainability of change. As Schein's (1985, 1992) and Staw's (1986) research shows, employees' performances are established by their interaction with the organization's culture, climate, and policies (cited in McNabb & Sepic, 1995). Overall organizational performance is a product of the group culture's behavioral norms established by the standards of performance and abilities of others within the organizational context.

Changing culture can be done only when employees learn new sets of behaviors. "Organizational cultures must be changed to reinforce and maintain changes achieved by individuals" (Bennis, et al., 1969, p. 317). To change learned individual and collective habits, as Thompson and Luthans (1990) describe, the existing perceptions and status quo must be dismantled while the new culture and new behaviors are reinforced. McNabb and Sepic add that to

overcome the tendency to revert to the old learned habits and comfort zones, "the workplace environment must be closely managed to ensure that only the new culture is reinforced" (1995, p. 372). Radin and Coffee (1993) assert that an external motivation for organizational change is important to the acceptance of any new program, change initiative, or management philosophy, which sets an example or the tone for change. Whether the shared motivation for organizational change is externally or internally driven, building a shared perception of the urgency for change is more likely when a coalition powerful enough to shift the dominant view exists.

Organizational culture is shaped by interactions between leadership style, gender values, professional groups' values, social and ethnic groupings (Morgan, 1997). Sociologists, anthropologists and historians explore differences across societal cultures, observing group norms, social interaction, and communication patterns, senses of time, shared meaning, role, identity, and space (Boorstin, 1991). These differences exist across organizational cultures as well.

Culture is defined in myriad ways to capture the focal components of interest to different contributors/scholars. Table 4 outlines selected contributors' differing terminology for cultural components.

Table 4

Contributors' Terminology for Cultural Components

Cultural Components	Contributor
Stories, rites, language, and symbols	Connor and Lake, 1988
Overall environment, internal communication, employees' role conflicts, and supervisory support	Dastmalchian, Blyton and Adamson, 1991
"Determinants of culture" include the business environment, values, heroes, rites and rituals, the cultural network or primary information and means of communication within an organization	Deal and Kennedy, 1982
A "cultural screen" includes: rules and policies, goals and measurement, customs and norms, training, ceremonies and events, management behaviors, rewards and recognition, communications, physical environment, and organizational structure	Galpin, 1996
Structure, technology, employee role clarity and social interaction and support	McNabb and Sepic, 1995
Beliefs, assumptions, values, expectations, paradigms, frames of reference	Pepper, 1995
Leadership modeling of behavior is fundamental to group members identifying with and internalizing the leader's values and basic assumptions	Schein, 1985; 1990
Two mechanisms are proposed to embed and solidify culture in a new organization: primary embedding mechanisms (including what leaders attend to, measure, control, how they react, role modeling, etc.); secondary reinforcement mechanisms (including mechanisms that help organization members recognize important cultural values such as policies, etc.)	Schein, 1985; 1990
Pattern of basic assumptions that endures as the group learns to solve its problems of external adaptation and internal integration	Schein, 1992

Different types of cultures or models to describe and categorize organizational cultures are discussed in the literature. An overview follows.

Quinn and Rohrbaugh (1983) build on two underlying dimensions in their competing values model of organizational culture. Their typology is based on "the first dimension is an internal, person-oriented emphasis versus an external, organization-oriented emphasis; the second dimension has an emphasis on stability and control versus an emphasis on flexibility and change" (cited in Kwan & Walker, 2004, p. 23). These two axes form a four-quadrant typology of group culture (flexibility/change and internal/people oriented), developmental culture (flexibility/change and external/organization oriented), the hierarchical culture (stability/control and internal/people oriented), and the rational culture (stability/control and external/organization oriented).

Wallach (1983) identifies three separate organizational cultures: innovative/entrepreneurial cultures, where challenge and risk-taking are the norm; bureaucratic cultures, with clear lines of responsibility and authority; and supportive cultures, where the work environment is typically friendly and accommodating (cited in Berson, Oreg & Dvir, 2005, p. 2).

Schneider (1994) identifies four types of organizational cultures: control, collaboration, competence, and cultivation (cited in Schulz, 2001). Control cultures pursue predictability and order; collaboration cultures pursue participation and highly cohesive teams; competence cultures pursue excellence and innovation; cultivation cultures pursue enrichment for customers and

employees and leadership is charismatic and inspirational (Schulz, 2001). Each type is distinguished by differing approaches to strategy, leadership and organizational behavior, according to Schulz.

Harrison (1972) and Handy (1978, 1985) use the same two dimensions with different terminology: formalization and centralization in a four-quadrant model (cited in Pheysey, 1993), and later adapted by Pheysey. Pheysey outlines four distinct types: role culture, achievement culture, power culture, and support culture. Role cultures strive for clarity and precision of roles and procedures; achievement cultures assume people are motivated by intrinsic satisfaction from the work; power cultures are "at best based on leadership strength, justice and paternalistic benevolence...at its worst, ruled by fear" (Pheysey, 1993, p. 17); support cultures offer members satisfactions from relationships, with the assumption that from a sense of commitment, they will contribute. Pheysey analyzes the fit of various variables with the four types of cultures. Variables for fit include methods of control, structures of organization, purposes of job design, motivation, decision-making strategies, leadership and management styles, values, and organizational development processes.

Understanding organizational culture, components, and types are considerations for identifying practices for managing change and organizational readiness. Cultural differences abound across industries, employer organization types, professions, management styles, and internal operational responses to external environments.

A distinguishing characteristic of organizational culture is its capacity for learning and continuous improvement. "The ability to assess and improve learning may represent the single most important defining characteristic of successful organizations" (Redding & Catalanello, 1994, p. 106).

Organizational Learning

"The established culture of an organization possesses a set of learned consequences based on behaviors" (McNabb & Sepic, 1995, p. 372). Learned consequences shape individual and group resistance, readiness or learning. Organizational learning as a concept was first introduced by Argyris and Schon (1978) in their seminal work *Organizational Learning: A Theory of Action Perspective.* Peter Senge popularized the concept in *The Fifth Discipline* (1990). Organizational learning is conceptualized by Senge as a number of "core disciplines," including systems thinking, personal mastery, mental models, building shared vision and team learning, with definitions as follows: (a) Systems thinking is understanding the system by contemplating the whole, not any individual part of the pattern. (b) Personal mastery is the discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively. (c) Mental models are the deeply engrained assumptions, generalizations...that influence how we understand the world and how we take action. (d) Building a shared vision is to hold a shared picture of the future we seek to create. (e) Team learning is where the intelligence of the team is greater than the individuals comprising it, and

involves dialogue, the capacity of members of a team to suspend assumptions and enter into a genuine thinking together. Dialogue also involves learning how to recognize the patterns of interactions in teams that undermine learning (Senge, 1990, p. 7-10). "Learning organizations...continuously take action, reflect upon that action, and modify plans based on insights gained through this learning process" (Redding & Catalanello, 1994, p. 26).

A distinction is made in the organizational learning literature between "single loop" and "double loop" learning (Argyris & Schon, 1978). While single loop learning is an outcome of behavior repetition, double loop learning is the result of reflection and thought. Only double loop learning has the potential to culminate in long-term impacts or changes in an organization (Argyris & Schon, 1978; Fiol & Lyles, 1985). This type of learning is resonant with more mature stages of organization development and change, and with the depth of change referred to by contributors expanding on Lewin's 1947 model and term of "refreezing" at the new state (Anderson & Anderson, 2001; Beckhard & Harris, 1977; Beer, 1980; Gilley & Maycunich, 2000; Kanter, 1983; Nadler & Tushman, 1989; Tichy and Devanna, 1986; Senge, 1990; Schein, 1987). Redding and Catalanello state that "most organizational change results not from formal plans and fixed programs for change but from a process of learning—not just from the learning of individuals but, more importantly, from the collective learning of entire organizations" (1994, p. xi).

Contextual Factors that Facilitate Readiness

A number of factors related to the organizational context or culture were identified as practices for managing change and organizational readiness, including: (a) employee involvement strategies or increased participation in planning the changes, (b) open communications, (c) self-efficacy or the individual and organizational capacity to deliver what is necessary as a result of the change, (d) a supportive work climate, including having trust in peers and management; (e) trust in the behaviors of those responsible for the change and their ability to manage the change process properly, and employee perceptions of the organization's readiness for change overall; and (f) flexible organizational policies and procedures (Wanberg & Banas, 2000; Litwin & Stringer, 1968; Miller et al., 1994; Weick, 1979; Spreitzer, 1996). Findings from the literature follow.

Employee Involvement Strategies or Increased Participation

Across the change management literature, employee involvement or increased participation in the planning of the changes are considered critical for the success of change initiatives (Chawla & Kelloway 2004). "Participation refers to allowing workers to have input regarding a proposed change" (Wanberg & Banas, p. 134, 2000). The literature distinguishes between "decision or process control," according to Tyler, 1987, (as cited in Chawla & Kelloway, 2004), with decision control relating to the actual decisions made and process control relating to the opportunity to simply state one's case. Coch and French (1948) investigate ways of overcoming resistance to change and found that participation

in planning and development of the changes facilitated readiness. In their research, when employees self-discovered the seriousness of the external threat posed by competition, they then recognized the necessity of the changes (1948). Cobb, Wooten and Folger (1995) note the importance of justice issues and concerns involving fairness during times of organizational change.

Open Communications

Open communications are an essential factor for an organization interested in being more adaptable to change. Mayer et al. (1995) find that open communications allay fears, educate employees and convey a party's competency in making the change happen, which can engender favorable attitudes toward change (as cited in Chawla & Kelloway, 2004, p. 487). "Information accessibility and a climate encouraging discussions may significantly impact employee attitudes about change" (Miller et al., 1994, p. 75). Employees are commonly active in seeking additional information about change and discuss it among themselves rather than passive in receiving information to decide whether to support change or not (1994).

Self-Efficacy or Organizational Capacity to Change

Beckhard and Harris (1987) believe that readiness for change should be examined in relation to organizational capabilities, proposing a matrix to examine the relationship between existing organizational capabilities and levels of readiness for change. "Change-related self-efficacy is an individual's perceived ability to handle change in a given situation and to function well on the job

despite demands of the change" (Wanberg & Banas, 2000, p.134). Bandura (1977) asserts that "domain-specific self-efficacy" depends on the specifics of a situation and can be increased through organizational interventions that enhance mastery of the situation. Conner (1992) suggests that individuals will not perform well in change contexts without confidence in their own abilities.

A Supportive Work Climate

Social support enhances readiness for change by minimizing stress and by providing a sense of togetherness and trust in those involved in navigating the change. Individuals with more social support tend to experience higher levels of mental and physical health during stressful life events (Mallinckrodt & Fretz, 1988, as cited in Wanberg & Banas, 2000). Strong social support and affiliations with high-performing teams may even increase self-perceptions of efficacy and the capacity to navigate change. Armenakis et al. (1993) suggest that interpersonal and social dynamics within one's work group may impact organizational readiness for change. Fiorelli and Margolis (1993) suggest that conditions of mutual trust and risk taking reduce resistance and enhance receptivity and commitment to change. For change efforts to be successful, employees must trust not only management (Armenakis et al., 1993: McManus et al., 1995; as cited in Eby et al., 2000) but also co-workers (Cummings & Huse, 1989, as cited in Eby et al., 2000). Trust in peers to reduce anxieties about accountabilities, particularly in teams, is critical because a common concern raised by individuals working in teams is that teammates may engage in "social

loafing" (Sheppard, 1993). Concerns about social loafing may be lessened if the work-group environment exhibits reciprocity, trust, and confidence in the skills and abilities of one's peers (Riggs & Knight, 1994; Sheppard, 1993). Riggs and Knight find that "the experience of success-failure within one's work group" positively contributed to: (a) beliefs about personal ability, (b) beliefs about the ability of one's group, (c) the perceived links between individual performance and rewards, (d) the perceived links between group performance and group rewards, (e) work satisfaction and (f) organizational commitment (p. 762). Sheppard adds that "participants in performance groups who work hard run the risk that others will free ride on their efforts. This potential inequity in contributions may lead individuals to withhold efforts in performance groups as a means of restoring equity and avoiding being a sucker to others' free riding" (1993, p. 69). Wanberg and Banas (2000) assert that higher levels of change information, participation, change-related self-efficacy, social support, and lower levels of personal impact will be related to higher levels of openness to the changes occurring within a reorganizing workplace. "Social support refers to the availability of another individual to turn to for information, affection, comfort, encouragement, or reassurance. Personal impact refers to the net perceived effect that a particular change will have on an individual or his or her working environment" (Wanberg & Banas, 2000, p. 134). A social network can facilitate or hinder change based on its perceptions of the change and the influence of the group on individual perceptions. Ways to encourage and foster perceptions of

support, participation and trust among employees include "encouraging open communication, providing skills training and implementing task forces to increase employee participation in decision-making relevant to the change" (Eby et al., 2000, p. 436).

Trust

Trust in those responsible for managing change and in the organization's ability to change are important factors in understanding resistance or readiness behaviors. Organizational change reflects an "individual's unique interpretive reality of the organization" (Eby et al. 2000, p. 422), noting the powerful role perceptions of the workplace have on individuals' attitudes, beliefs, and sense of empowerment (Spreitzer, 1996). It is through this interpretive process that individuals develop a frame of reference for organizing and understanding work-related events and experiences (Weick, 1979). Vroom's expectancy theory (1964) suggests that employees' perceptions of trust, in those managing the change effort and in the organization's readiness to change, will result in behavior expected to realize the desired change. In other words, if there is little expectancy that the people managing the change can do so effectively and that the organization is actually ready to change, individual attitudes and behaviors of readiness will not follow. Expectancy theory establishes linkages between effort and performance, performance and reward.

Flexible Organizational Policies and Practices

Scholars find that flexible organizational policies and practices are important in understanding how an employee perceives the organization's readiness for change (Armenakis et al., 1993). These factors may include flexible policies and procedures, and logistics and systems support (Beckhard & Harris, 1987; Schneider et al., 1992). If the organization's structure is perceived as inflexible, employees are likely to hold less positive attitudes about the organization and its people's responsiveness to change (Eby et al., 2000).

To summarize this perspective from the conceptual framework, contextual factors identified for managing change and organizational readiness include: (a) increased participation in planning of the changes, (b) open communications, (c) self-efficacy or the individual and organizational capacity to deliver what is necessary as a result of the change, (d) a supportive work climate, including having trust in peers and management; (e) trust in the behaviors of those responsible for the change and their ability to manage the change process properly, and the overall perceptions of the organization's readiness for change; and (f) flexible organizational policies and procedures. Change is a process of learning, and the culture of an organization is influential in shaping readiness or resistance.

Content of the Change

The content of the change (type, strategy, or focus) is the third perspective from the conceptual framework followed for the Literature Review.

The content of the change is commonly predicated by an attempt to agree on the focus for change and to narrow the gap between the current state and an ideal future state. Three dimensions of the content of change follow: (a) how organizational change occurs, (b) the types of change that are likely to be met with readiness rather than resistance, and (c) the different foci for organizational change.

How Organizational Change Occurs

Organizational change is ever present, since organizations are continuously responding in one way or another to their external environments, to shifting regulations, or to competitive landscapes. The organization's survival depends on how to integrate and coordinate internal functioning in response to the external environment (Schein, 1992). Change occurs whether planned or unplanned, since change is the only constant.

Organizational change involves mobilizing support for a shared basic assumption about the change or focus for change such as a new strategic direction, product, or service offering, etc. A collective, coordinated, intentional response can occur fundamentally only when there is a shared belief about where attention should be paid--the content of the change. A shared assumption held in an organization defines the reason for the change, what warrants urgent attention, what meanings they should attach to environmental trends and organizational events, and what actions, preferences, and motivations they should have. A shared basic assumption or belief consists of cognitive,

emotional, motivational, and behavioral components taken for granted, subtly or overtly communicated, and, as a rule, seldom confronted or challenged by organization members (Schein, 1992). Ranson, Hinings, and Greenwood (1980) refer to organizational-level cognitive paradigms or interpretive frames (schema) as "provinces of meaning" that represent the organization's values and interests. They suggest that these provinces of meaning are used subsequently to validate and legitimize actions and structural frameworks.

Individual organization members may either accept or reject the organization's values and interests to some degree. According to social learning theory (Bandura, 1977), social interactions maintain equilibrium or attempt to build conformity to organizational roles, processes, group norms, and formal rules. It is a human tendency to focus attention on or bias the interpretation of information to be congruent with current assumptions, beliefs, or knowledge in an attempt to diminish any cognitive dissonance associated with new information. "The theory of constructivism rests on the notion that there is an innate human drive to make sense of the world (Billett, 1996, p. 2, as cited in Kerka, 1997)." Billet adds that instead of absorbing or passively receiving objective knowledge, learners actively construct knowledge by integrating new information and experiences into what they have previously come to understand, revising and reinterpreting old knowledge in order to reconcile it with the new.

The literature agrees on a model of reframing where individuals must first become aware of their own mental models before the identification and

construction of collective or organizational models can occur. These cognitive paradigms, schema, mental models or provinces of meaning influence which environmental stimuli an individual will attend to, deem as relevant, or, conversely, deem potentially most threatening. While attention and conscious awareness implies some degree of readiness for change, individual perceptions of urgency for change must be influential and compelling enough to shape collective perceptions and ultimately broader organizational systems. The individual contributes to the shaping of the collective models and vice versa. In order to shift or reframe current individual mental models unlike those held in the past, individuals must be presented with new information, as well as alternative understandings and explanations others in the organization may have of this information (Anderson & Anderson, 2001; Lewin, 1951; Schein, 1987; Senge, 1990).

The depth of change is an important consideration in reframing current mental models and in navigating individuals toward integrating and coordinating change throughout the system. The depth of change involves reflection and thought or "double-loop learning," rather than merely repeating behaviors (Argyris & Schon, 1978). A key aspect of the depth dimension of change is the occurrence of a cognitive or paradigm shift, regardless of the label which evolved from Lewin's refreezing concept. A paradigm shift involves the subsequent replacement of old beliefs with a new set of beliefs. Kuhn defined "paradigm" as the "entire constellation of beliefs, values, techniques and so on shared by the

members of a given community" (1970, p. 175). Changes of such depth call into question core cognitions held by organizational members regarding their values and rationality, their competency, and even how they make sense of their organizational world; consequently, changes of such depth can raise formidable resistance and create considerable duress in individuals (Sheldon, 1980).

Refreezing at a new state reflects new learning applied and indicates an endorsement of the change by organization members. Lewin describes this process in three stages: "unfreezing" from the present state, "moving" or transitioning to the next desired state, and "refreezing" at the new state (1947, 1951). He believes refreezing prevents a potential backslide to prior states, and, therefore, any plan for change should incorporate an expectation and effort toward permanency at the new "equilibrium" position. Many contributors expand and modify Kurt Lewin's three-stage model for understanding change situations (1947, 1951) and the epitome of deep organizational change, or "refreezing" (as cited in French & Bell, 1995). This deep, transformational change has been labeled as: (a) "reframing of mental models" (Senge 1990); (b) a "refreezing" redefined as the stage that helps the client integrate the new point of view into the total personality and self-concept and into significant relationships (Schein, 1987); (c) "the generalization and stabilization of change" (Lippitt, Watson, & Westley, 1958, as cited in French & Bell, 1995); (d) radical change that requires an entirely different mindset to implement and sustain over time (Anderson & Anderson, 2001).

Organizational change results from learning, interacting with pressures and information that influence decision making and goal setting. Individual and collective learning can be destabilizing to the status quo. "To learn in deep and fundamental ways raises elemental fears and triggers powerful defense mechanisms. To learn means facing the unknown, recognizing that we do not possess all of the answers, conceding that we often do not know what to do, admitting that past decisions and actions may no longer be valid, questioning the basic assumptions we have long held about the business, and making ourselves vulnerable amid the political dynamics that pervade all organizations" (Redding & Catalanello, 1994, p. 11-12). Open organizational systems change when a change in one aspect of the system will usually have an impact on other areas of the system and cause reverberating adjustments. Ideal open organizations focus energy on defining and achieving their purposes by creating commitment, attaining alignment, and improving productivity, rather than on power, legal or coercive authority. "The open organization represents its purpose to outside groups and gathers information that may influence decisions and goals. They are proactive rather than reactive in relation to their environments" (Mink, Mink, Downes & Owen, 1994, p. 8).

Types of Change Likely to Be Met with Readiness

The types of organizational change likely to be met with readiness rather than resistance are those types consistent with: (a) individual needs e.g. the type of change is consistent with their values, needs for achievement, affiliation,

etc.; and (b) organizational identification e.g. the change is in harmony with the established institutions of the group (Miller, Johnson, et al., 1994). Miller, Johnson and Grau studied these two sets of "antecedent factors" which influence employees' initial attitudes about the change: individual needs and organizational identification (1994).

Individual needs are the first set of antecedent factors influential in shaping attitudes about the change. Needs for achievement and affiliation, drawing on David McClelland's work (1961), represent respectively (a) personality disposition to respond favorably to opportunity and challenge, and (b) individuals' desire to belong to a social collective. According to Litwin and Stringer (1968), "individuals with a high need for achievement find change to present more responsibility for solving problems" (p. 11-15). Employees with high achievement needs perceive change in very favorable terms. In contrast, employees with low achievement needs perceive change less favorably. Individuals have differing relative strengths or degrees of readiness based on personal motives. Their behavior in response to change or threats reflects their various motives and the situational characteristics or opportunities change presents (1968).

Organizational identification is the second set of antecedent factors influential in shaping attitudes about the change (Miller, Johnson, et al., 1994). Employees who identify with the organization are likely to "believe in the organization's goals, trust its leadership and consequently be less anxious about

the impact of change on their work roles" (1994, p. 64). Individuals in the same organization may hold very different perceptions of work-related events and experiences based on identification with different departments, professions, past experiences. Weick calls these "interpretive sense-making processes where individuals develop a frame of reference for understanding work-related events and experiences" (1979, p. 19).

The aim of organizational change and learning efforts is to increase the momentum and readiness for change in order to counter the prevailing forces that maintain the status quo. The content of the change or type of change (e.g. planning based on national standards, benchmarks set by the competition or industry leaders, a new strategy) sets a shared meaning or focus for individuals in organizations.

Different Foci for Organizational Change

Many contributors have examined the focus for organizational change, as outlined in Table 5. The focus for change establishes shared meaning about priorities and about what warrants collective attention. The content of the change can create a common focus on a particular type of change. The type or content of change is situational, eliciting varied readiness or resistance responses.

Table 5

Contributors' Foci for Organizational Change

Focus for Organizational Change	Contributor
Recommend that the development of a strategy (or content) for systematic organizational improvement demands an examination of the present state of "readiness" and "capability" in terms of the various subsystems and processes of an organization	Beckhard and Harris (1977, p. 24)
Identify several themes for change: (a) mission or "reason to be", (b) identity or outside image, (c) relationships to key stakeholders, (d) way of work, and (e) culture	Beckhard and Pritchard (1992, p. 37)
Diagnose organizational subsystems and target: (a) the total organization, (b) large subsystems, (c) small subsystems, (d) small, total organizations, (e) interface or intergroup subsystems, (f) dyads or triads, (g) individuals, (h) roles, (i) between organization systems	French and Bell (1995, p. 116-119)
Distinguish between three basic forms of change: (a) identity changes in the relationship between the organization and "macro-evolutionary forces," (b) coordination changes involving the internal structures, activities or "micro-evolutionary forces", (c) changes in control or the "political dimension"	Moss Kanter et al. (1992, p. 15)
Consider types of change along two dimensions: (a) the "scope of the change" or the subsystems, and (b) "the positioning of the change in relation to key external events" or the entire organizational system	Nadler and Tushman (1989, p. 196).
Define "levers of change" as: (a) markets and customers, (b) products and services, (c) business processes, (d) people and reward systems, (e) structure and facilities, (f) technologies	Price Waterhouse Change Integration Team (1995, p. 7-8)

Given scholars' findings that failures with change initiatives are often attributable to the implementation process, rather than the strategy or type of change itself (Beer et al, 1990; Dunphy, 1996; Weick & Quinn, 1999; as cited in

Waldersee & Griffiths, 2004, p. 424), the content of change contributed few if any practices for building a readiness foundation, aside from a few considerations informing constructs identified for the subscales. Refreezing the organization at a new desired state requires effectively managing the process of change, where change initiative failures are often attributed.

The Process of Change

The process of change is the last perspective from the conceptual framework followed for the Literature Review. The process of planned organizational change involves the capacities to both implement and anchor change within the system. Various scholars have discussed the concept that the capacities required to implement change in the business environment are different from those required for current business performance (Turner & Crawford, 1998). Based on the literature reviewed, there are eight fundamental elements that contribute practices for implementing change (the process of change), as follows: (a) a clear desired state for a planned change initiative, (b) communications, (c) understanding of the different implementation approaches, (d) the capacity to reshape capabilities within individuals and the organization, (e) the need for employees to have some control over the change, (f) the influence of workgroups and social learning, and (g) the need for alignment across sub-systems to anchor and sustain change in the culture over time. An overview of the above elements follows.

A Clear Desired State for a Planned Change

The essence of planned change is that there is a formula for organizational effectiveness or some agreed-upon standard for which to strive (e.g., Baldrige quality criteria, comparison with other organizations in the same sector, etc.). Organizations assess how they compare to the standards and set plans in motion to move towards them. Planned change is predicated on information.

An assessment is essential to building a compelling case for the need to change and for increasing awareness, understanding and action. Assessment and diagnosis not only aid organization development practitioners who often advocate for a pre-intervention assessment (Jenlink, 1994; Mohrman & Cummings, 1989), but also have considerable benefit for the organization by providing feedback about the systems, work requirements, and individual capacities needed to ultimately enable transfer of learning back to the organization (1989). Scholars tend to agree that awareness of the need to change begins with some type of assessment, data, or information that perturbs a system enough to cause people in the organization to examine it and its need to change. Beckhard and Harris (1987) assert that an assessment of organizational capabilities enables focusing on specific areas to create the critical energy for change to occur. Schein (1987) calls this "cognitive restructuring" as a response to new relevant information from scanning the environment. Peach, Jimmieson and White's research reinforces the importance of a pre-

implementation assessment of readiness for change (2005). A pre-implementation assessment can provide organizations with: (a) an early indication of employees' beliefs and the determinants of their intentions prior to change implementation, and (b) ways to measure underlying beliefs and intentions across different stages of an organization's change implementation based on the theory of planned behavior (Peach et al., 2005). Many times interest in an assessment of the organization's culture or current state for planned change is based on due to established linkages between culture and organizational performance (Gordon & DiTomaso 1992; Petty, Beadles, Lowry, Chapman, & Connell, 1995).

Scholars focus on different variables or criteria for planned change within organizational systems. Porras (1987) describes four classes of variables, categorized as "streams." They are: organizing arrangements, social factors, technology, and physical settings. Gilley and Maycunich (2000) consider planned, data-based approaches to change those that involve setting goals, planning action, monitoring feedback, and evaluating results. Burke (1994) considers planned change to be either "transactional" or "transformational" (1994); others consider it "developmental," "transitional," or "transformational" (Anderson & Anderson, 2001; Beckhard & Harris, 1987). Kilmann (1989) identifies "critical leverage points" to target and adjust for change and to determine essential steps in organization development consulting and planned change. The critical leverage points Kilmann describes exist in all organizations

and ultimately influence the organization's success when functioning properly. Kilmann describes them as "tracks:" (a) culture, (b) management skills, (c) team-building, (d) strategy-structure, and (e) reward system. Moss Kanter et al. (1992) suggest a "change execution plan" that reflects many process considerations. The plan includes four criteria: (a) it involves and empowers people throughout the organization, (b) it reflects a valid conceptual framework, (c) it is driven by and tied operationally to the organization's critical goals and objectives, (d) it is based on a thorough understanding of the actual situation. "Accurate diagnosis based on valid data is essential" (p. 507).

The process of managing change starts with focus on a clear desired state, then a pre-assessment, planning how to narrow gaps between the present and desired states, and implementing and anchoring change. Understanding how to manage the process of change and its fundamental elements provides considerations for identifying practices for managing change and organizational readiness.

Communications

The communication environment employees experience can influence readiness for change. Scholars demonstrate that effective information sharing strategies and certain message domains about the change may increase readiness for change. Armenakis et al. (1993) identify three effective communication strategies: persuasive communication (direct communication efforts), active participation (involving people in activities designed to allow them

to learn directly through self-discovery), and managing internal and external information (making the views of others available). "The change message and its communication can serve to coordinate the three change phases by providing the organizing framework for creating readiness and the motivation to adopt and institutionalize the change," according to Armenakis and Harris (2002, p. 169). Armenakis et al. (1993) propose that five key message domains (discrepancy, efficacy, appropriateness, principal support, and personal valence) and their "resulting sentiments created by the content of these messages combine to shape an individual's motivations, positive (readiness and support) or negative (resistance) toward the change" (p. 170). Discrepancy addresses whether there is a recognized need to change related to current organizational performance and to some desired end state (Katz & Kahn, 1978); efficacy refers to confidence in one's ability to succeed (Bandura, 1986) and the expectancy that leaders will navigate the change and that they will succeed (Vroom, 1964); appropriateness relates to a form of change being needed and how well the specific change being proposed fits these needs; principal support is demonstrated by the resources and commitment necessary to see the change through to institutionalization (Armenakis et al., 2002, p. 170). Gist and Armenakis suggest that the three strategies could be combined with the five message domains or components of the change message to "create readiness for change" (cited in Armenakis et al., 2002, p. 171). A strong, open communication environment that supports readiness includes messages regarding: (a) the need for a proposed change, (b)

information about the change, and (c) how the change will be implemented. Each of these message domains are discussed as follows.

Communicating the need for change by pointing out the discrepancy between the desired ideal or end state and the present state, along with the concept of individual and collective efficacy--the ability of those impacted by the change to adapt--are essentials to the "message for change," according to Armenakis et al., 1993 (p. 684). Cummings and Worley (2001) speak of "creating a felt need for change" by: (a) sensitizing organizations to pressures for change, (b) revealing discrepancies between current and desired states, and (c) conveying credible positive expectations for the change (p. 110-111). According to Pettigrew (1987), emphasizing the importance of changes or the "management of meaning" associated with the external environment, including social, economic, political, and competitive aspects, helps the change agent(s) justify the need for organizational change and its legitimacy in relation to the organization's performance. "The management of meaning refers to a process of symbolic construction and value use designed to create legitimacy for one's ideas, actions and demands and to delegitimate the demands of one's opponents" (p. 659). Armenakis et al. (1993) add that "intellectual pain, diffused satisfaction, and organizational failure may be used to suggest aspects of a discrepancy between the present state and some apparent or implied desired end state" (p. 685). "Creating a shared vision and common direction" unites the organization around the importance for change and a central vision (Moss Kanter

et al., 1992, p. 383). Others stress the need to "create awareness of the discrepancy between pain" (Nadler & Tushman, 1989, p. 199), dissatisfaction (Spector, 1989) and unfavorable personal consequences (Bandura, 1982). Nadler and Tushman speak of "urgency and energy [as] emotional issues, and experience indicates that people and organizations develop the energy to change when faced with real pain" (1989, p. 199). Spector outlines different strategies for diffusing dissatisfaction: (a) sharing competitive information, (b) pointing to shortcomings in individuals and on-the-job behaviors; (c) offering models that suggest not just where the company ought to be headed but also how far it is from that goal, (d) mandating dissatisfaction (1989, p. 30). In an organization's social system, messages are shaped by the interpretation and meaning of the message and the events and circumstances facing the organization (Armenakis et al., 1993).

The effectiveness of change messages may depend fundamentally upon the communications or openness of the information environment experienced by employees. Managers shape an "open" communication climate (Jablin, 1979; Redding, 1972; as cited in Miller et al., 1994) so that employees feel adequately informed of impending changes. Coch and French (1948) demonstrate the value of informing groups about the need for change and for allowing organization members to participate in change efforts. Miller and Monge (1985) suggest that "the accumulation of information (over time as shared by managers) appears to be as important a determinant of attitudes as recent information" (p. 381).

According to Miller and Monge's research, if employees have the overall impression that "no one ever tells me anything," they report that prior information "has not been helpful," and they are likely to be unreceptive to organizational change (p. 64). Employees who receive ample information in a timely and appropriate fashion and who have a high need for achievement are more willing to participate in an organizational change. By having some information, employees may not experience insecurities in their work role when change is announced, may have recognized foreshadowing of the change, and may be in positions to discuss the impending changes with others (Miller & Monge, 1985). Miller et al. (1994) suggest that a more accurate scenario for positive change would portray employees as active participants who seek additional information about change and discuss it among themselves instead of being passive recipients who must decide whether or not to support change. In this latter case, information accessibility and a climate that encourages discussion may significantly impact employee attitudes about change (Miller et al., 1994).

Communicating the message for change by clarifying the roles associated with the intended change and how change will be implemented strengthens individual and collective efficacy. As asserted by Rizzo, House, and Lirtzman (1970), employees who are unsure of the requirements and demands of their new roles are unlikely to perceive the organization's dissemination of information about the proposed change as helpful and, in turn, may resist it. In other words,

the messenger is discredited because the recipient of the message was not properly informed. Employees' role ambiguity may also affect their attitude toward organizational change. Specifically, measures of role ambiguity indicate workers' awareness of others' expectations about how a task should be performed and how performance will be rewarded. If an employee is unclear about their role or unable, due to a lack of skills, to realize the change, the change may be further resisted.

Implementation Approaches

Change implementation is "a process which includes the creation of understanding and commitment toward a particular change and devices whereby it can become integral to the client system's operations" (Bennis et al., 1969, p. 77). Common elements, steps, or organizational capabilities for implementation were identified from the work of many scholars (Beer & Nohria, 2000; Bennis, et al., 1969; Cummings & Worley, 2005; Detert, Schroeder, & Mauriel, 2000; Leavitt, 1965; Kotter & Schlesinger, 1979; Moss Kanter et al., 1992; Powell & Posner, 1980; Waldersee & Griffiths, 2004). Four common change management steps were identified: pre-planning assessment, planning, implementing, and anchoring change. Understanding different implementation approaches encompasses common elements, methods, broad strategies and types, as follows.

Common Elements for Implementation

A summary of the necessary elements for implementation according to Bennis et al. (1969) includes: (a) The client system should have as much understanding of the change and its consequences, as much influence in developing and controlling the fate of the change, and as much trust in the initiator of the change as is possible; (b) the change effort should be perceived as being self-motivated and voluntary as possible; (c) the change program must include emotional value as well as cognitive (informational) elements for successful implementation; (d) the client-change agent relationship is pivotal to the success of the change program. They add, that "the change agent can be crucial in reducing resistance to change. The change agent has to act congruently with the principles of the program, provide the psychological support during the risky phases of change, and allow the client a chance to test competence and motives" (p. 77-78).

Moss Kanter et al. outline the "ten commandments for executing change:" (a) Analyze the organization and its need for change, (b) create a shared vision and common direction, (c) separate from the past, (d) create a sense of urgency, (e) support a strong leader role, (f) line up political sponsorship, (g) craft an implementation plan, (h) develop enabling structures, (i) communicate, involve people, and be honest, and (j) reinforce and institutionalize the change (1992, p. 383-384).

Common Methods

Participative or unilateral change implementation methods are distinguished in the literature (Beer & Nohria, 2000; Waldersee & Griffiths, 2004). The distinction between participative methods and unilateral methods is that the former seeks employee support as essential to success, and the latter presumes it will follow afterward. Participative methods are defined as "consultative, shared techniques that directly target the values, attitudes, and skills of organizational members" and aim to build employee support for change (Waldersee & Griffiths, 2004, p. 425). Unilateral methods are prescriptive, control and authority-based techniques that modify objective or formal aspects of the workplace. "They tend to be top down, procedural methods focused on resource allocation and the following of formal authority lines" (Waldersee & Griffiths, 2004, p. 425).

Kotter and Schlesinger recommend six different methods for dealing with resistance to change and by extension, for facilitating readiness for or adoption of change: (a) education and communication, (b) participation and involvement, (c) facilitation and support, (d) negotiation and agreement, (e) manipulation and co-optation, (f) explicit and implicit coercion. "The determination of which method to use depends on the speed of the effort, the amount of preplanning, the involvement of others, and the relative emphasis they will give to different approaches" (1979, p. 109-112).

Strategies for Implementation

Chin and Benne (1969) describe three types of strategies for implementing change. The first type of strategy, "empirical-rational," is based on the assumption that people are rational and will follow their rational self-interest and will change when they come to realize that change is advantageous to them. The second type of strategy, "normative-reeducative", is based on the assumptions that norms form the basis for behavior and that change comes through a reeducation process in which old norms are discarded and supplanted by new ones. The third type of strategy, "coercive power," is based on the influence of those with power on the compliance of those with less power. The SCOR instrument follows a normative-reeducative strategy for implementing change by empowering individual employees with information about the elements or practices for strengthening an organizational readiness for change foundation.

Change Styles

Bennis, Benne, and Chin (1969) construct a typology of seven change styles in addition to planned change, based on differences in power distribution, goal setting, and change implementation, as follows: (a) "indoctrination change:" a mutual and deliberate goal setting but under unilateral power; (b) "coercive change:" unilateral goal setting with deliberate intentions using unilateral power; (c) "technocratic change:" unilateral goal setting but shared power; (d) "interactional change:" shared power under conditions where goals are not

deliberately sought; (e) "socialization change:" unilateral power but collaborative goal implementation; (f) "emulative change:" unilateral power without deliberate goals; (g) "natural change:" a residual category based on shared power with nondeliberate goal setting, i.e., changes are due to accidents, unintended events, etc. (1969, p. 81-82). The change style would need to match: (a) organization development interventions and implementation approaches based on readiness and resistance to facilitate change transitions, as well as (b) the type of change desired and (c) the timing of the change initiative.

Types of Change

Waldersee and Griffiths find that the types of change (technical-structural or behavioral-social) inform the implementation methods (unilateral or shared methods) (2004). Managers perceive unilateral change methods to be more important in the implementation of technical-structural change, and shared or participative methods more important in the implementation of behavioral social change (2004). "With the context and behavior changed from concrete actions, interventions targeting attitudes may then follow" (p. 432). According to Waldersee and Griffiths (2004), unilateral methods include directives and memos, redeployment of key staff, and job redesign. The shared methods consist of pilot programs, training, meetings, problem-solving groups, development of coalitions, and rewards and incentives. Unilateral change methods and frontline support are associated with change success according to Waldersee and Griffiths. Frontline support is statistically significantly associated

with the type of change. Without employee support, changes in attitude, culture, or behavior are unlikely to be achieved (Waldersee & Griffiths, 2004).

Research indicates that employee support is a function of change type rather than participative implementation (Waldersee & Griffiths, 2004); however, according to previously discussed findings, change initiative failures are attributable to the implementation process rather than the strategy or type of change itself (Beer et al., 1990; Dunphy, 1996; Weick & Quinn, 1999). Other scholars find that participation, team-building, and process consultation build support for a change (Lawler, 1992; Waldersee & Griffiths, 2004), and that employee support is highest for changes that are social or behavioral in nature, or those that are considered popular (2004).

Technical-structural or behavioral-social types of change have been distinguished in the literature for at least four decades (Waldersee & Griffiths, 2004). Organization development interventions are classified by researchers as either technical-structural or behavioral-social (Leavitt, 1965; Powell & Posner, 1980; Waldersee & Griffiths, 2004) and as human process, technostructural, human resource management, or strategic interventions (Cummings & Worley, 2005). Techno-structural interventions focus on the design of the organizational structure. Behavioral-social change interventions focus on the modification of established relationships within the organization (Waldersee & Griffiths, 2004). To elaborate further on the two intervention types: (a) technical-structural types focus on structure, individual roles, authority and reward systems, task design,

work flow, technological systems, policies and procedures; (b) behavioral-social types focus on the emotional reactions in a minimally structured environment and on the involvement of others in decisions about the change effort (Powell & Posner, 1980).

Sequencing of Change Types in Implementation

Whether behavioral-social change should come before technostructural change is an issue scholars question (Beer, Eisenstat & Spector, 2000; Lawler, 1992; Mohrman & Cummings, 1989; Powell & Posner, 1980; Waldersee & Griffiths, 2004).

Scholars advocate for behavioral-social change before technostructural change. According to Coch and French (1948), approaching unilateral change without first considering if there is employee support is too simplistic. Change is viewed as unlikely to succeed without prior employee support for the change (Dunphy & Griffiths, 2002; Emery & Emery, 1993). For behavioral-social changes, Powell and Posner (1980) argue that "shared" approaches to implementation are most appropriate. Intervention methods such as participation, team-building, and process consultation build support for change because they involve employees (Lawler, 1992, p. 3).

Others advocate that technostructural change requires behavioral-social change to follow. Waldersee and Griffiths note that top-down, procedural techniques, that involve unilaterally changing the workplace, are based on the assumption that attitudes and behaviors will adjust accordingly in response

(2005). Powell and Posner (1980) believe that it is feasible to implement technical-structural changes through edict and reinforce them later with behavioral interventions. Beer, Eisenstat and Spector (1990) assert that "the most effective way to change behavior is to impose new roles, responsibilities and relationships on people," based on the findings of a four-year study of organizational change at six large corporations (p. 159). "Task alignment can be achieved through a sequence of six overlapping, distinctive steps. The 'critical path' establishes a self-reinforcing cycle of commitment, coordination and competence." The sequence of steps to "elicit renewal without imposing it" is as follows: (a) Mobilize commitment to change through joint diagnosis of business problems; (b) develop a shared vision of how to organize and manage for competitiveness; (c) foster consensus for the new vision, competence to enact it, and cohesion to move it along; (d) spread revitalization to all departments without pushing it from the top; (e) institutionalize revitalization through formal policies, systems and structures; (f) monitor and adjust strategies in response to problems in the revitalization process (p. 161-164).

According to Beer et al. (1990), the question of whether a structural (a.k.a. "technostructural") intervention or people or process intervention (a.k.a. "behavioral-social") should come first is dependent on the situation surrounding the change and the resulting consequences of each intervention choice. Structural interventions change behavior more rapidly, while people and process interventions, more slowly. The key distinction, according to Beer et al., is that

with structural interventions there is uncertainty and insecurity where people direct their frustration and anger at both the source of the change and the change effort itself. With people and process interventions, the result is a building of commitment where people direct their frustration and anger at the organization rather than at the change agent or effort (1990). Waldersee and Griffith's (2004) research supports Beer et al.'s position that support is not a pre-requisite of change, but that appropriate structures and roles must be put into place first and then attitudes, work relationships, and behaviors will change accordingly.

Reshaping Capabilities

The process of change requires that employees and managers responsible for implementing and managing the change have the capacity to do so. Several scholars assert the importance of "reshaping capabilities" (Beckhard & Harris, 1987; Jones, Jimmieson, & Griffiths, 2005; Miller & Chen, 1994; Turner & Crawford, 1998). Reshaping the organization's capabilities develops and utilizes the knowledge, skills, and abilities of its staff to carry out the necessary requirements for successful change implementation (Beckhard & Harris, 1987). "The capabilities to achieve effective change are very different from those needed to achieve current performance" (Turner & Crawford, 1998, p. 11). According to Mohrman and Cummings (1989) approaching change as a learning experience makes for the best organizational change programs. Organizations using a high-involvement management approach require participating individuals

who are willing and able to continue to learn and develop (Lawler, 1992). Participation or "high involvement management place(s) substantial demands on employees in terms of their ability to solve problems, contribute to group discussions, and...contribute to the organization's basic effectiveness" (Lawler, 1992, p. 53).

Turner and Crawford (1998) propose a taxonomy as part of reshaping, consisting of engagement, development, and performance management capabilities. Engagement is based on informing and involving organizational members in an attempt to encourage a sense of motivation and commitment to the goals and objectives of the organization. Development involves developing all resources and systems the organization needs to achieve its desired future. Proactively managing the factors that drive the organization's performance to ensure that it consistently and effectively achieves the intended change is the capability Turner and Crawford label "performance management."

Miller and Chen (1994) assert that the development of reshaping capabilities results in successful change implementation. In analyzing 243 cases of organizational change, Turner and Crawford (1998) found that reshaping, or the development of capabilities, were positively correlated with the rates of success for implementing change. Effective change outcomes are undermined when organizations have low levels of reshaping capabilities or little capacity to learn, develop, and change. Strong positive relationships between reshaping capabilities and successful change implementation have been found in studies

such as the causes and consequences of competitive inertia in the airline industry by Miller and Chen (1994).

The Need for Employees to Have Some Control over Change

Participation and control over change have been topics of considerable inquiry in the literature and have been discussed previously in the context of the change as it relates to shaping a culture or readiness foundation. Participation in decisions about a change creates ownership of the process and the outcome of the change, and, consequently, breeds less resistance to the change (Coch & French, 1948).

Lau and Woodman (1995) found that individuals who perceived themselves as having control over changing situations tended to have positive beliefs about change in general and about their reaction to a specific type of change (that is, change in policies). "People who strongly believe that the locus of control is internal ('internals') believe that they have control over change events. If they see a reasonable probability of success, they are not afraid of change. In contrast, 'externals' may accept or reject change depending on whether they interpret external forces as sources of success or failure and may feel less capable than internals of coping with changes, regardless of their perceived source" (p. 539).

According to Bennis et al. (1969), procedures for instituting change and overcoming resistance start with employee participation, understanding, and a sense of control, with some flexibility over change. Further, change initiatives

are likely to facilitate readiness and work to overcome resistance: (a) if participants have joined in diagnostic efforts leading them to agree on what the basic problem is and to feel its importance, (b) if the project is adopted by consensual group decision, (c) if proponents are able to empathize with opponents, to recognize value objections, to take steps to relieve unnecessary fears; (d) if it is recognized that innovations are likely to be misunderstood and misinterpreted, and if provision is made for feedback of perceptions of the project and for further clarification as needed; (e) if participants experience acceptance, support, trust and confidence in their relations with one another; (f) if the project is kept open to revision and reconsideration if experience indicates that changes would be desirable (p. 496-497).

Workgroups and Social Learning

The influence of workgroup health is another factor that can strengthen or undermine the process of change given the formidable influence of individuals in work groups and across social networks. Most models of organizational change suggest that building momentum and buy-in to the change effort are critical components of any organizational change initiative (Armenakis et al., 1993), and a work team or group is a microcosm for readiness or resistance. Healthy work teams exhibit a number of characteristics: (a) task interdependence, decision-making autonomy, and organizational support (Cohen & Bailey, 1997; Goodman, Devadas, & Hughson, 1988); (b) trust in peers to reduce anxieties about accountabilities (Riggs & Knight, 1994; Sheppard, 1993); (c) reciprocity, trust,

and confidence in the skills and abilities of one's peers (Sheppard, 1993). Conversely, while social loafing is a common concern raised by individuals working in teams, noted by Sheppard (1993), Eby et al. (2000) asserted that much less is known about areas of potential resistance related to the relationship between employees' attitudes and their perception that the organization is ready to undergo a large-scale change to team-based work. The influence within work teams, and the variety of factors that increase their success and health, suggests that deploying and involving effective work teams as champions for organizational change are essential to the process of implementing change.

Need for Alignment

Completing the process of change involves aligning or anchoring change to ensure mutually reinforcing supports (alignment) and a greater likelihood of sustainability for change across the sub-systems of the organization. Organizations must be willing to commit a consistent effort to completing a change process or their members will abandon the process or exhibit inertia and readily become more entrenched in their existing, comfortable status quo. Senge (1990) suggests that defensive routines and behaviors may surface and be counterproductive when the organization is trying to make its members challenge their own schema or "mental models." Senge also asserts that change efforts that do not embrace the entire organization as a complex system are destined to fail. Argyris and Schon (1978) add that to learn in deep and fundamental ways, organizations must be willing to delve into unexplored

territory in terms of questioning and facing the realities for their organization. Tichy and Ulrich (1984) suggest that organizational leaders must act to ensure that the dominant coalition feels a pressure for change based on some dissatisfaction with the status quo. Once the dominant coalition experiences and accepts the need for change, the "defensive forces" within the organization will be released, and the resultant "energy for revitalizing" the organization will enable change to occur (1984, p. 245).

When the initiation of change affects everything in an organization from individuals to groups, various organizational subsystems e.g. policies, work processes, etc. must change and readjust to accommodate, support, and complete the change. If not, change will not proceed nor be sustained successfully across the system. In effect, characteristics of organizational subsystems can constrain or sabotage the change initiative. Lewin calls for subsystems change until they are in relative "equilibrium" (1951), or alignment with each other, i.e., they are mutually reinforcing through systemic supports. "A number of subsystems are also needed for a properly functioning whole: a political or decision-making subsystem, a technical subsystem, a cultural subsystem, and a human resource subsystem" (Mink et al., 1994, p. 29).

As part of the process of change, specific sub-systems and policies that need to be realigned prior to the change should be identified. Cultural elements need to be assessed and realigned to support the change before an implementation effort could start to take hold or be "anchored." Assessing and

realigning across the culture is likely to increase employee confidence in the organization's ability to withstand change and may create the momentum necessary to sustain the change effort. "A comprehensive needs assessment that encompasses all areas of the organization is one technique that can be used to obtain such information" (Eby et al., 2000, p. 436). The Context of the Change section previously discussed various cultural elements that may contribute to practices for managing change and organizational readiness.

Understanding the fundamental elements, types of change and sequencing of change are considerations for identifying practices for managing change and organizational readiness. With each successful change implementation, a positive expectancy is reinforced so that the perception of the organization--by individuals and work groups within it--is that it indeed has the capacity to change and improve some aspect of organizational performance.

Perceptions of Organizational Performance

Variable of Interest

Organizational performance was an additional scale in the online survey field test incorporated for two primary reasons: (a) Performance is a measure commonly of interest to a broad audience, and (b) performance is a variable of interest in relation to the constructs or subscales in the Survey. Financial or objective measures of performance are not readily captured by employee informants at all levels across multiple employer organizations. For this reason, a subjective or judgment scale for overall organizational performance was

selected for incorporation into the online survey field test. Organizational performance has established linkages with culture (Gordon & DiTomaso 1992; Petty et al., 1995), or the context of change or culture, previously discussed. Measures and determinants of overall organizational performance, and their relationships to dimensions of organizational readiness are discussed below.

Measures of Overall Organizational Performance

Measures of overall organizational performance are extensive in the literature, and there are some encouraging findings related to the relationship of overall organizational performance and practices for managing change and organizational readiness. Performance constitutes some objective or subjective value to the organization depending on the measure and the stakeholders' perspectives. Given the wide interest in performance, there is an equally wide range of measures of both financial or objective measures and non-financial or subjective measures used to capture it.

The most frequently studied measures of organizational performance in the literature, according to Combs, Liu, Hall, & Ketchen (2006), were divided into five dimensions: productivity, retention, accounting returns, growth, and market returns. Accounting returns were the most frequently studied in the research, followed by productivity, retention, multidimensional (those that combined two or more dimensions into a single overarching measure of performance), growth, and market returns. From those, two broad categories emerged: operational performance and financial performance measures. Jaworski and Kohli (1993)

identify performance as measured in the literature using objective, financial measures, and subjective or judgment measures about operational performance.

Financial measures for accounting purposes and profit indicators are more universally accepted, and measures of corporate financial performance are extensive (Huselid, 1995). While financial measures are a point of comparison, "complete reliance on financial indicators of business performance often can bias a measure of effectiveness toward particular stakeholders. [For example], risk-adjusted earnings per share is a favorable measure of business performance for market analysts, but shows a clear bias toward shareholders and investors" (Denison, 1984, p. 8).

Subjective or judgment measures of non-financial (or operational) performance acceptable in the literature include strategy, execution, management experience and attractiveness, according to Schlenker and Matcham (2005). A company's non-financial performance is critical to how it is evaluated, with a Top 5 accounting firm, Cap Gemini Ernst & Young, concluding that at least a third of a mature company's value is attributable to non-financial information (2005).

Determinants of Organizational Performance

"The determinants of firm performance have long been of central interest to strategic management researchers" (Rumelt, Schendel, & Teece, 1994, as cited in Short, Ketchen, Palmer, & Hult, 2007, p. 147). Hansen and Wernerfelt (1989) found that determinants of performance are based primarily on an

"economic tradition," emphasizing "the importance of external market factors in determining firm success," and a "behavioral and sociological paradigm," emphasizing "organizational factors and their fit with the environment as the major determinants of success" (p. 400).

Lenz (1981) identifies six factors influencing organizational performance:

1. Environment-performance linkage that captures how the overall configuration of a competitive setting, e.g., sales concentration ratios, rate of growth in demand, advertising-to-sales ratio affect performance.

2. Environment and organization structure linkage that measures how the response in the form of structure to deal with its external environment affects performance.

3. Structure of the organization linkage that finds how differences between absolute size of an enterprise and other factors and circumstances affect its performance.

4. Strategy-organization structure linkage that explores how: (a) changes in strategy and product-market relationships strain administrative structures and (b) managerial perceptions, socialization, and responses to environmental conditions ultimately affect organizational performance.

5. Environment and strategy linkage that measures how the effects of market conditions and strategy affect performance. Measures such as market share, product (service) quality, marketing expenditures, research and

development expenditures, and breadth of product line were found to be particularly important.

6. Administration and organizational performance linkage that suggests how the level of skill and motivation of administrators can have a major impact on organizational performance (1981, p. 132-139).

Undoubtedly, adapting to the external environment has a bearing on organizational readiness for change by impacting product life cycles, quality standards, work processes. Influences on market performance (an external or economic focus) are outside the scope of this research. This research focuses on practices for managing change and organizational readiness that may enable an organization to more effectively manage change initiatives, adapt to an accelerating pace of change, and improve its organizational performance.

Relationship to Organizational Readiness for Change

Performance was presumed to be related to organizational readiness for change and to practices identified for managing change and organizational readiness in the Survey. The basis for this presumption was that if an organization and its culture were ready for change--or adaptable, resilient, internally responsive to pressures from the external environment, and capable of effectively managing change--this would ultimately be reflected in its overall organizational performance. With the relationship between organizational readiness for change and overall organizational performance supported in this research, utilizing the Chase SCOR 8 Survey as a tool for (a) improving overall

organizational performance and for (b) possibly exploring relationships with other organizational performance measures holds promise for future practice and research.

Findings in the literature support the relationships between practices for managing change and organizational readiness and overall organizational performance, particularly from the Context of Change perspective previously discussed in that section. Linkages between three practices or elements in the culture and organizational performance follow: (a) high performance human resource practices (Combs et al 2006; Huselid, 1995); (b) influence of managerial behavior on employees (Hansen & Wernerfelt, 1989; Nohria, Joyce, & Roberson, 2003); (c) culture, structure and other influences on performance (Lenz, 1981; Nohria et al., 2003; Petty et al., 1995).

High Performance Human Resource Practices

Certain human resources practices can be a "central ingredient affecting organizational performance" (Pfeffer, 1998, p. 501, as cited in Combs et al., 2006). According to Huselid (1995), there is a growing consensus that organizational human resource policies can "provide a direct and economically significant contribution to firm performance" (p. 636) using market-based and accounting-based measures. Cascio (1991) and Flamholtz (1985) assert that "the financial returns associated with investments in progressive HRM practices are generally substantial" (as cited in Huselid, 1995, p. 639). Human resource management practices labeled "High Performance Work Practices," by the U.S.

Department of Labor in 1993, include extensive recruitment, selection and training procedures, formal information sharing, attitude assessment, job design, grievance procedures, labor-management participation programs, performance appraisal, promotion and incentive compensation systems that recognize and reward employee merit (Huselid, 1995). These practices have all been "widely linked with valued firm-level outcomes," according to Huselid (p. 640). "The theoretical literature clearly suggests that the behavior of employees within firms has important implications for organizational performance and that human resource management practices can affect individual employee performance through their influence over employees' skills and motivation and through organizational structures that allow employees to improve how their jobs are performed" (Huselid, 1995, p. 636).

As the review above suggests, organizational performance can start with human resource practices and an interest in employees as "competitive advantage," rather than traditional sources of competitive advantage such as quality, technology, or economies of scale (Becker & Huselid, 1998, p. 54).

Influence of Managerial Behavior on Employees

Managers can be influential in shaping employees' behavior in relation to formal and informal structure, planning, reward, control and information systems, skills and personalities, and the relation of these elements to the environment and organizational performance (Hansen & Wernerfelt, 1989). Respective measures include employee satisfaction, retention, development,

climate and organizational processes to shareholder wealth (Cameron, 1986; Goodman & Pennings, 1977; Nohria, Joyce and Roberson, 2003; Steers, 1975; as cited in Hansen & Wernerfelt, 1989).

Strategy, Execution, Culture, and Other Influences on Performance

The management practices of "strategy," "execution," "culture," and "structure" were found to be the practices that resulted in companies outperforming their industry peers in a five-year study by Nohria, Joyce, and Roberson (2003, p. 43). These practices are summarized as follows: (a) strategy involves clear and consistent communications to customers, employees and shareholders; (b) execution involves paying disciplined attention to operations and productivity; (c) an outperforming culture involves one that champions high-level performance and ethical behavior, encourages outstanding individual and team contributions, and holds everyone responsible for success; (d) structure and processes involve simplicity for employees, vendors, and customers (Nohria, et al., 2003, p. 43-49). "Winning companies" also retain and develop talented employees, and "great executives can raise performance significantly" (2003, p. 49).

Strategy or the strategy-organization structure linkage identified by Lenz indicates that strategy and structure affect managerial perceptions, their socialization, and other aspects of behavior that influence strategic choices. These strategy and administrative choices influence managerial socialization and

the role a dominant coalition plays in determining or perpetuating strategy (Miles, Snow & Pfeffer, 1974; Snow, 1976; as cited in Lenz, 1981).

Execution or the administration linkage with organizational performance suggests that the level of skill and motivation of administrators can have a major impact on organizational performance. Managerial beliefs and perceptions, organizational survival, and performance are the focus for a growing body of research. "Little evidence exists that relatively simple, unidirectional causal relationships among constructs account for organizational performance. There is a complex network of interdependent elements in accounting for organizational performance." (Lenz, 1981, p. 141).

Culture may influence organizational performance, according to Petty et al. (1995). Dimensions of culture include: (a) teamwork, (b) trust and credibility, (c) performance and common goals, and (d) organizational functioning. Organizational performance measures include: (a) operations, (b) customer accounting, (c) support services, (d) marketing, and (e) employee safety and health (1995). Denison (1984) reports that: (a) companies with a participative culture reap a return on investment on average nearly twice that of firms with less efficient cultures and (b) cultural and behavioral aspects of organizations are linked to both short-term performance and long-term survival (as cited in Petty et al., 1995, p. 486). Petty et al. find that the strongest indication of the link between culture and performance is between teamwork or cooperative behaviors and performance.

Understanding organizational performance measures and linkages to culture are considerations in identifying practices for managing change and organizational readiness.

Summary of Literature and Constructs that Informed the Instrument Development

Readiness for change, organizational culture, organizational learning, organizational change, and planned change literature contributions have expanded considerably in the last three decades. Commonalities across the literature using the four perspectives of readiness for change--individual, context, content, process--informed the SCOR instrument development by: (a) identifying practices for managing change and organizational readiness (constructs) that are within the organization's sphere of influence, and (b) establishing the basis for an ideal state or proven practices for building a solid readiness foundation—a distinct type of culture that is ready for change. The initial 12 constructs identified from the literature included:

1. Communication
2. External context
3. Initiating change
4. Leadership support
5. Tolerance of change
6. Alignment
7. Collaborative work culture

8. Current use of data
9. Learning orientation
10. Treatment of customers/stakeholders
11. Treatment of employees
12. Work unit health

See Appendix A for a comprehensive summary of the literature that informed the initial 12 constructs.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this chapter is to present the study design, which encompassed two phases. Phase 1 was an expert review of the first draft instrument developed (from the item generation/development to scale development steps), Phase 2 was an online survey field test of the final instrumentation (after the expert review refinements), for usage and evaluation of contributing evidence for reliability and validity.

Overview of Research Design

This exploratory research identifies practices for managing change and organizational readiness (SCOR) in a survey instrument consisting initially of 12 and finally of 8 new subscales or possible predictors. Assessing practices for managing change and organizational readiness conceptually encompasses the organizational and cultural context, including groups within that context, the individual's readiness for change, and the process of managing change in an organization. Churchill's sequence of steps informed this exploratory research design for "producing measures with desirable psychometric properties" (1979, p. 66). The sequence of steps was as follows:

1. Specify domain of the construct (Literature Review),

2. Generate sample items (item generation: review of other instruments/scales, adaptation of items, development of new items),

3. Collect data for the initial 12 subscales (based on the instrument draft revision 1 for Phase 1: expert review),

4. Refine the measures (instrument revision 2 for Phase 2: online survey field test),

5. Collect data (Phase 2: online survey field test, preliminary analyses, reduction of 12 subscales to 8),

6. Assess reliability, and

7. Assess validity.

An overview of the research design is depicted in Figure 2.

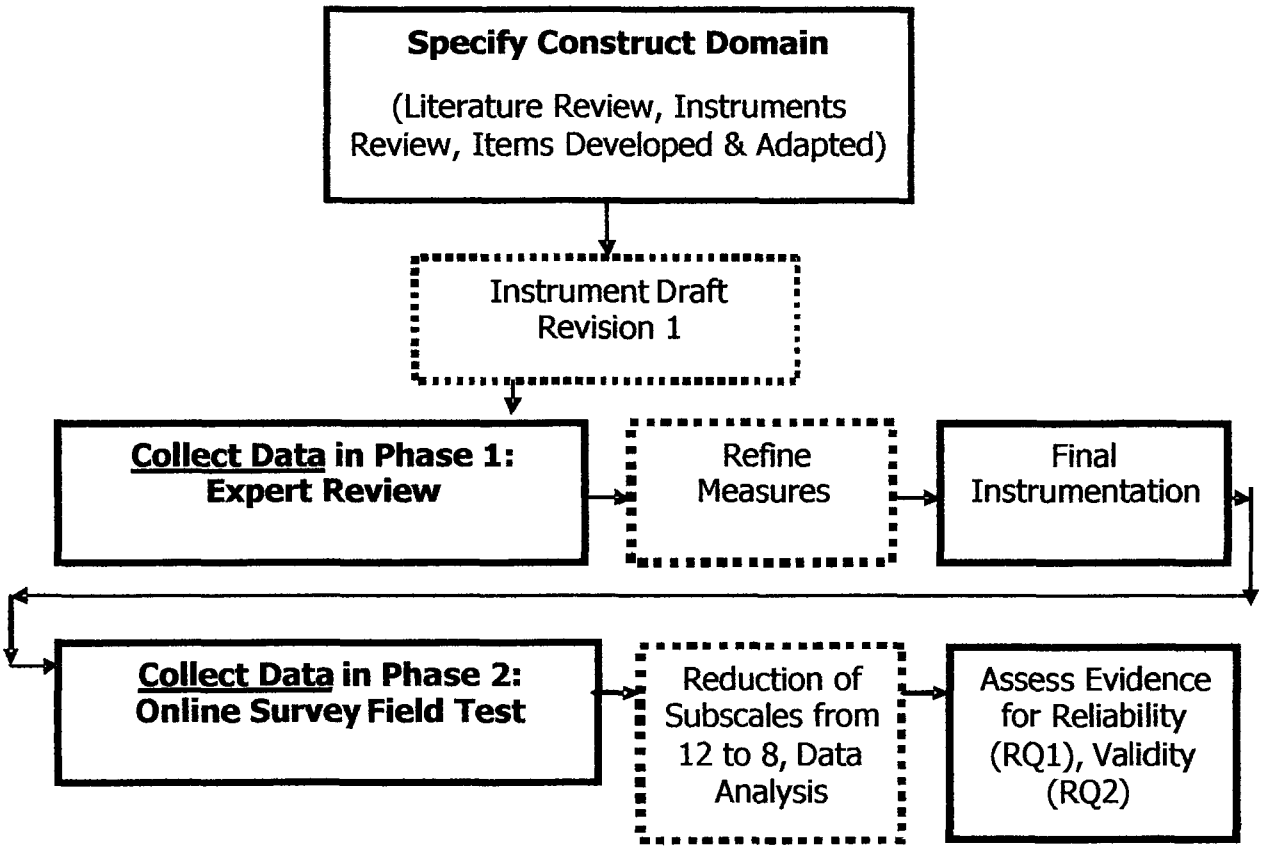

Figure 2. **SCOR exploratory research design.**

Overview of Instrument Development

Hinkin's overview of best practices in scale development procedures (1995) informed the approach for item and scale development for the instrument development. Three stages and steps are recommended for instrument development, Stage 1: item generation, where the primary concern is content validity; Stage 2: scale development, consisting of three steps (study design, scale construction, and reliability assessment), where the focus is on identifying a set of items for the construct(s), reliability and construct validity; Stage 3:

scale evaluation, where the primary focus is on further evidence of construct validity of the new measure, such as by (a) demonstrating a "nomological network of relationships with other variables through criterion-related validity," (b) "assessing two groups who would be expected to differ on the measure," and (c) "demonstrating discriminant and convergent validity..." (1995, p. 979-980).

Phase 1: Item Generation/Development and Scale Development (Expert Review)

The content or theory from the literature and instruments reviewed informed the development of items and subscales (constructs), and contributed evidence for content validity. See Appendix D for the Instrument Draft Revision 1 used in the expert review.

Phase 2: Instrument Usage and Evaluation (Online Survey Field Test)

The field test data contributed evidence for reliability and validity as follows: internal consistency reliability and construct validity (convergent and discriminant evidence). See Appendix F for the final instrumentation used in the online survey field test.

The development of a quantitative survey was deemed the best data collection strategy for assessing practices for managing change and organizational readiness and possible predictors of hypothesized relationships with variables of interest. Quantitative methods ease data collection,

interpretation with large samples, and the comparison of findings (Price & Mueller, 1986).

The contribution of a valid and reliable assessment instrument to measure practices for managing change and organizational readiness would enable usage: (a) with other samples, (b) with organizations pre- and post-change interventions, and (c) with larger samples in a single organization to look more closely at intra-organizational differences for readiness (Price & Mueller, 1986).

Expert Review (Phase 1)

The expert review was the final scale development step of Phase 1, intended to both clarify and narrow the number of items in each subscale for Section C of the Survey.

Description of Draft for Expert Review

Developing the draft for expert review (instrument draft revision 1) consisted of the following steps: (a) identifying constructs from the literature (see Appendix A for the Literature that Informs the SCOR Survey Constructs), (b) adapting measures from existing scales used in the SCOR Survey (see Appendix B for Items Adapted or Used from Comparable Instruments or Scales for Initial SCOR Subscales), and (c) reviewing other instruments (see Appendix C for Instruments Reviewed by Readiness Perspectives). Items were developed only for those constructs considered by the researcher to be within an organization's sphere of influence. A large pool of items was developed considering the boundaries of the constructs from both theoretical and empirical viewpoints, as

recommended by Clark and Watson, 1995. Items for the new SCOR scale in Section C, initially consisting of 12 subscales, 58 items, were written in full sentences with positive or neutral directions of measurement (see Appendix D for the Instrument Draft Revision 1 for the expert review), with higher scores reflecting increased or greater readiness.

Procedure for Expert Review

Fourteen expert reviewers from Colorado State University's Organizational Performance and Change (OPC) graduate program, with the majority having professional expertise in the fields of organization development, human resource development or organizational performance and change, were invited to participate.

Instrument Draft Revision 1

The expert review of the SCOR Survey Instrument Draft Revision 1 (see Appendix D) focused exclusively on Section C of the instrument; the items reviewed were organized by construct to keep the participants' focus on each of the 12 subscales or 12 practices for managing change and organizational readiness. Reviewers identified items that were answerable by employees with one year's experience in an organization and made rewording suggestions.

Instrument Refinement from Expert Review

The perceptions of expert reviewers guided the further development and refinement of Section C of the SCOR Survey instrument--the new practices for managing change and organizational readiness items and subscales. Expert

reviewers reduced the number of items from 58 items to 56, and they suggested rewording to check the instrument's clarity and ease of completion before field testing. The researcher further reduced the number of items by 9 to a total of 47 determined by the theoretical basis, insights from discussions in the expert review, and concerns about survey completion time requirements when combined with additional items from the other sections. A guideline was ideally at least three (3) items per subscale for each of the initial 12 practices for managing change and organizational readiness constructs, based on Anderson's (1987) suggestion of at least three indicators of each construct to sufficiently define a second-order measurement or factor analysis model; however, some subscales had only 2 items, given that the items met criteria suggested by Bergkvist and Rossiters (2007) when the object was singular and the attribute concrete.

Instrument Revision 2

After the expert review, refinements were made to the SCOR Survey, and the final instrumentation was prepared for the online survey field test with the sample of professionals employed by public health sector organizations.

Research Questions

The research design addressed two main research questions:

1. What is the evidence for reliability of the Chase SCOR subscales or possible predictors?

2. What is the evidence for validity of the Chase SCOR subscales or possible predictors?

Primary Study (Phase 2)

Instrument Description

The online survey instrument for the field test consisted of five sections: Section A: participant demographic and organization background information; Section B: perceptions of organizational performance, four items extensively adapted from the overall organizational performance scale by Slater, Olson, and Hult (2006); Section C: the new Chase SCOR scale, comprised of 47 items intended to measure 12 subscales or possible predictors, or practices for managing change and organizational readiness (see Appendix F final instrumentation); Section D: organizational readiness for change scale by Eby, Adams, Russell, and Gaby (2000); Section E: stereotype beliefs about women managers, three items from the scale by Moore, Grunberg, and Greenberg (2004).

All item response choices in Sections B – E scales were structured and coded along the same 5-point Likert scale: strongly agree-5, agree-4, neither agree nor disagree-3, disagree-2, strongly disagree-1, not enough information to assess-0. This format was selected based on Hinkin's findings that 89% of scales used in scale development practices for organization studies utilized five to seven point Likert scales and are considered "adequate for most measures" (1995, p. 974). Negatively worded items were reverse scored so that lower

scores reflected decreased or lesser readiness, and higher scores reflected increased or greater readiness.

Table 6 provides an overview of the measures in respective survey sections.

Table 6

Survey Section Measures

Section	Measure
A	Demographic and background information
B	Perceptions of organizational performance
C	Practices for managing change and organizational readiness
D	Organizational readiness for change
E	Stereotype beliefs about women managers

Demographic and Background Information

Section A for the online survey sample of individuals from employer organizations included: (a) total years of experience in public health, (b) whether job responsibilities were in management, evaluation, planning, process, or performance improvement; (c) type of employer organization, and (d) number of employees at their location.

Adapted Items for Perceptions of Organizational Performance

Section B included items extensively adapted from a 6-item scale by Slater, et al. 2006. Adaptations included dropping the first two items, replacing

"business" with "organization" and "competitors" with "employees" to be more appropriate for diverse sectors and to focus on what is within the organization's sphere of influence; additionally, the original ordered response choices were modified from "expectations" to "agreement." Four items were in this section:

1. Leadership (e.g. top management decision makers) was very satisfied with the overall performance of the organization last year (item 5).

2. We have much room to improve the overall performance of our organization (item 6).

3. Employees respect the performance of our organization (item 17).

4. Our performance makes it difficult for our organization to secure new resources (item 26).

Chase Solutions for Managing Change and Organizational Readiness (SCOR) Subscales

Section C initially included 12 constructs (see Table 7). The item and scale development of the subscales or possible predictors was informed by the literature and the usage or adaptation of items from existing scales (see Appendix B). A total of 47 items were in this section.

Table 7

SCOR 12 Initial Subscales or possible predictors and Number of Items in Field Test Instrumentation

Construct	# of Items	Construct	# of Items
Communication	5	Collaborative work culture	3
External context	2	Current use of data	3
Initiating change	9	Learning orientation	4
Leadership support	3	Treatment of customers/stakeholders	2
Tolerance of change	6	Treatment of employees	3
Alignment	2	Work unit health	5
			TOTAL: 47

Eby et al.'s Organizational Readiness for Change Scale

Section D items measuring organizational readiness for change were originally adapted from Daley (1991), Jones and Bearley (1986), and Tagliaferri (1991), as cited in Eby et al. (2000). Eby's 9-item, 5-point Likert scale with an alpha of .80 was used, including the following items as a sample: "When changes are made in this organization, employees usually lose out in the end." "It is really not possible to change things around here."

Items for Stereotype Beliefs about Women Managers

Section E included items from a scale designed to measure "the degree to which one believes women managers experience a greater number of obstacles and more critical judgments about their work performance compared to managerial men" ("stereotype beliefs"). Three items were selected from this 6-item, 5-point Likert scale, as follows:

1. Women managers have their ideas challenged more often than do managerial men (item 34).

2. Women managers have to perform much better than male managers in order to succeed (item 41).

3. Compared to male managers, female managers must continually prove themselves (item 55).

Relationships among Variables

Figure 3 depicts the variables of interest for the Chase SCOR Survey, exploring hypothesized relationships with external or empirical measures of organizational readiness for change (Eby et al., 2000), perceptions of organizational performance, and stereotype beliefs about women managers.

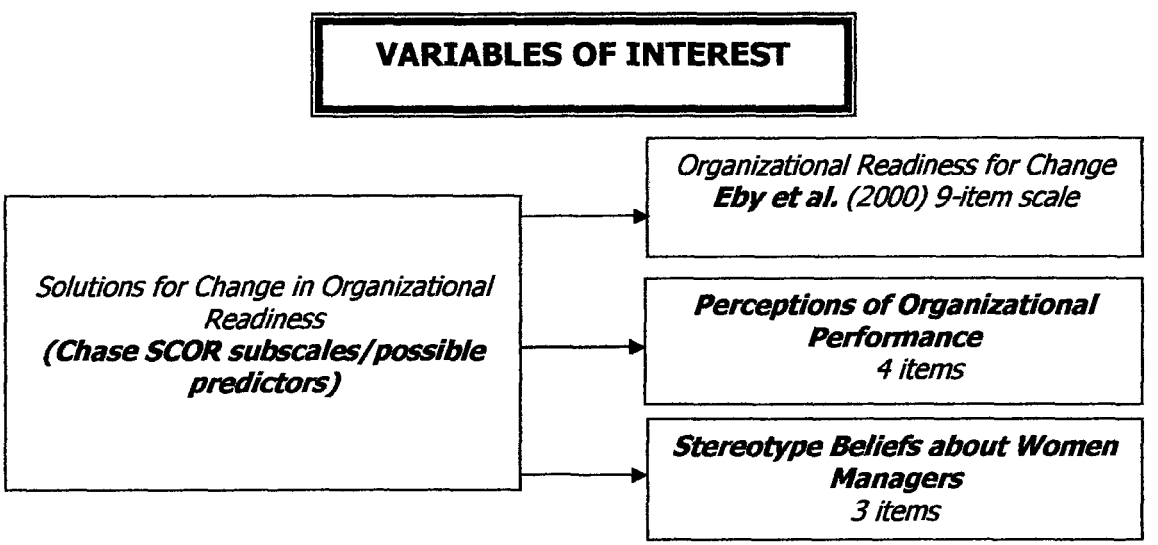

Figure 3. Variables of interest and relationships examined.

Items from all scales in Sections B – E were renumbered from Instrument Revision 2 (final instrumentation) for the online survey field test. The process

mixed up the items so they were not organized by construct or section. Each item was selected in order, down the list, to form a new version of interspersed items for the online survey field test final instrumentation (Appendix F).

The instrument in the field test was used to demonstrate evidence contributing to reliability and validity (the two main research questions).

Sample/Sampling

The population of interest for the instrument usage and evaluation in Phase 2 was organizations within the public health system across Colorado and nationally (research frame). The different types of employer organizations included in the sample were state health departments, county health departments, nursing services agencies, non-profits, universities, professional associations, and other affiliate organizations across the sector. Organizations within the public health system broadly provide population-level public and environmental health prevention and protection services.

The sampling frame of invited participants were employees or members of several cooperating organizations, including the Colorado Department of Public Health & Environment, Emergency Preparedness Division and Office of Local Liaison; Colorado Public Health Association, Public Health Directors of Colorado, the Colorado Directors of Environmental Health, and National Network of Public Health Institutes. Professionals employed by public health sector organizations include nurses, epidemiologists, public administrators, medical doctors,

educators/trainers, lawyers, sanitarians, and others who typically have college educations, advanced degrees, and certifications.

The sample selected for participation from Colorado public health organizations was estimated at 80 employer organizations of nine different types; the total sampling frame identified for Colorado participants was in the range of 367 to 492 (due to professional association membership estimates varying from year to year). The sample selected for participation from national public health organizations through the National Network of Public Health Institutes was estimated at 50 participants from 28 different employer organizations. Table 8 provides more detail on the sample.

Invited sample participants held professional titles such as Nursing Service Manager, Nursing Director, Business Manager, Supervisor, Program Manager, Program Supervisor, Regional Epidemiologist, Regional Planner, Evaluator, Environmental Health Director, Executive Director, Medical Director, Director Administrative Services, and Public Health Officer; any combination of these keywords were used to select the sample, provided such detail was available from the cooperating organizations. Individual participants were also required to have over one year's experience working in public health to participate in the sample. This time requirement ensured a minimum level of knowledge by the participant about their employer organization so they could assess the practice of practices for managing change and organizational readiness.

The online convenience survey sample yielded 223 respondents. These individuals, employed by organizations within the public health sector, were invited to voluntarily participate in the study to inform the researchers about their employer organizations' readiness for change.

Procedure

Invitations to participate in the field test were distributed via email and promoted through handouts/flyers (see Appendix L) displayed at the Colorado Public Health Association annual conference in September 2008. Email addresses were either provided to the researchers to send directly or email invitations were sent on behalf of the researchers via the cooperating organizations' designees.

Table 8

Sample Detail

COOPERATING ORG. NAME	SAMPLING FRAME
CO Department of Public Health & Environment (CDPHE), Emergency Preparedness & Response	35
CO Public Health Association	125-250
CO Directors of Environmental Health	32
Public Health Directors of CO	17
Local Public Health Directory (access) from CDPHE, Office of Local Liaison	TOTAL: 100 Nursing Serv. Managers, 36 LHD Nursing Directors, 16 LHD Directors of Administration, 21 Regional Planners, 27
National Network of Public Health Institutes	50
	TOTAL: 367-492

The saliency of the survey, monetary incentives, and multiple contacts were aimed to increase response rates (Dilmann, 2000), as follows:

1. Each prospective participant was sent an email explaining the survey purpose as it related to their work in public health, instructing them on the response options, and authorizing them to complete only one survey through the surveymonkey.com link provided. The surveymonkey.com link also provided an overview of the survey purpose and instructions for the response options. The email communication to prospective participants was sent on a Tuesday by the researcher, with a follow-up reminder seven days later and every seven days thereafter to non-respondents until the survey closed. Release of the email communications by the cooperating organizations' designees followed the same procedure. The survey links were open for one month to ensure participation.

2. All participants invited to complete the online survey were eligible to participate in a random drawing of one of four $50 VISA gift cards as an incentive. Participants were advised that another survey link was available for them to register for the drawing. Any identifying information for future contact related to the drawing was kept separate from the survey response data (see Appendix J for Drawing Instructions).

3. Individual participants in the online survey sample were contacted multiple ways and times: (a) the email lists were provided to the researchers, emails were sent directly inviting participation; (b) the email lists were not provided to the researchers, but accessed through the cooperating organizations'

designees, emails were sent by the cooperating organizations' designees inviting participation from its members or employees. With the cooperating organizations' designees, typically directors or presidents, also sending email reminders in both cases (whether email lists were provided or not), leadership of the cooperating organizations were in effect encouraging participation.

Consent

Consent for participating in the sample field test included letters of information and consent as required and approved by the Colorado State University Human Subjects Research Review (see Appendix G). Participants in the online survey also acknowledged their consent before proceeding (see Appendix I). Table 9 outlines the consent assurances provided to participants.

Table 9

Consent Assurances for Participants Phase 2 Online Survey Field Test

Participants	Type of Consent
Invited from cooperating organizations Invited from professional associations' mailing lists and websites (>200)	a. **Cooperating organizations' letters** consenting to invite voluntary employee or member participation in the online survey (written consent on their organization's letterhead)
Sample participants	b. **Online survey participants' consent acknowledgment** from individuals informing researcher about their employer organizations. Voluntary consent provided online to proceed in completing the survey.

Analysis

Preliminary Steps

Cleaning the Data

The first step was to clean the raw data, compiled from the surveymonkey.com site, before importing it into SPSS for coding and analysis. The surveymonkey.com summary reports were run to include overall results (counts and percentages) for all items and a crosstab comparison of results. Data were exported from surveymonkey.com into an Excel spreadsheet. All survey respondents had worked for their employer organization for at least one year and answered "yes" to item 1. "Yes" responses to item 68 regarding management responsibilities were determined not to be a requirement for inclusion, as was item #1, since there was no noteworthy pattern such as greater likelihood of responding with either missing or "not enough information to assess" for respondents with said management responsibilities.

Ensuring Correct Coding

Scores were coded per a coding form to ensure that all data had a numeric coded value, with only one value for each variable. Items that were negatively worded (i.e. items 6, 16, 25, 26, 30, 39, 53, 58, 62, 64, and 66) were reverse coded in SPSS. Any double answers and "not enough information to assess or N/A" answers for individual items were considered to be missing data. Missing data or blanks were left as blanks.

Descriptives by Variable

Descriptive and exploratory data analyses were done by variable for the following: (a) demographic and background information, (b) new Chase SCOR 8 subscales or possible predictors, and other variables of interest including: (c) the entire Eby et al. scale., (d) perceptions of organizational performance (4 items), and (e) stereotype beliefs about women managers (3 items).

Frequency distributions were prepared with the output including the number of occurrences, percentages, valid percentages and cumulative percentages, means, standard deviations, variances, skewness, and kurtosis (Morgan, Leech, Gloeckner, & Barrett, 2004). The variables of interest, perceptions of organizational performance, the Eby et al. scale, and stereotype beliefs about women managers, were also examined in frequency distributions.

Crosstabs tables were prepared with output of distributions for multiple items: the new Chase SCOR 8 subscales or possible predictors by each combination of demographic information (experience level, employer organization type, employer size). Subscale items were scored and summated with means for each of the final SCOR subscales.

Exploratory Data Analysis

Exploratory data analyses included the following steps: (a) checking the data for errors and skewness, (b) demonstrating evidence for reliability of the subscales and initial validity with the final SCOR subscales, and hypothesized relationships with variables of interest, as appropriate; and (c) checking for

technique-specific assumptions and conditions before conducting inferential statistics.

Checking the Data for Errors and Skewness

Data from the descriptive analyses were reviewed. Data for the SCOR 8 subscales, Eby et al. scale, and stereotype beliefs items were approximately normally distributed. It was noted that leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) for perceptions of organizational performance were "markedly" skewed (1.68 and 2.42), according to Morgan et al.'s skewness criterion of more than 1.0 or less than -1.0; the recommendation to use a nonparametric statistic was followed (2004, p. 49).

Demonstrating Evidence for Reliability and Initial Validity

The SCOR subscales and hypothesized relationships with variables of interest were analyzed before conducting further inferential statistics. Initial evidence for reliability and validity, discussion, and determinations to combine subscales and reduce items follow.

Initial 12 subscales' evidence for reliability and validity were analyzed using Cronbach's alpha and Pearson's correlation coefficients for normally distributed data. Table 10 outlines the initial reliability findings. Subscales with only one or two items usually have lower alphas.

Table 10

Initial 12 Subscales' Number of Initial Items and Cronbach's Alphas

Subscale Construct	# of Items	Cronbach's Alpha
Communication	5	.74
External context	2	.49
Initiating change	9	.76
Leadership support	3	.61
Tolerance of change	6	.74
Alignment	2	.60
Collaborative work culture	3	.57
Current use of data	3	.49
Learning orientation	4	.67
Treatment of customers/stakeholders	2	.32
Treatment of employees	3	.62
Work unit health	5	.72
	TOTAL: 47	

Correlations revealed that the majority of the initial 12 SCOR subscales were moderately to highly related; for example, the alignment subscale was significantly correlated with 7 out of 12 of the initial subscales, as follows: communication, external context for change, initiating change, treatment of customers/stakeholders, and treatment of employees. Considerations in combining the subscales also included the significant correlations with their respective combinations. Two new subscales were computed from several existing subscales as follows: (a) work culture health combined collaborative work culture and work unit health, which were positively and significantly correlated at .69, $p < .001$ level; (b) pressures for change combined current use of data, customer treatment, employee treatment, and external context, which were positively and significantly correlated at .45 to .56, $p < .01$ level. Given

these initial findings and the theoretical basis, the subscales were combined for further reliability testing.

Final Chase SCOR 8 subscales or possible predictors resulted based on combinations from the low alphas for initial reliability evidence, conceptual basis, and the empirical correlations. Table 11 outlines the final Chase SCOR 8 subscales or possible predictors with the combined subscales. Additionally, a total of 3 items were deleted after the exploratory data analyses due either to clarity concerns or considerable missing data.

Table 11

Chase SCOR 8 Final Subscales or Possible Predictors

Subscale Construct Name	# of Items	Cronbach's Alpha
1-Communication	5	.74
2-Initiating change	9	.76
3-Leadership support	3	.61
4-Tolerance of change	5	.74
5-Alignment	2	.60
6-Learning orientation	4	.67
7-Work culture health	7	.81
Combined:		
Collaborative work culture		
Work unit health		
8-Pressures for change	9	.79
Combined:		
Current use of data		
Customer treatment		
Employees treatment		
External context		
	TOTAL: 44	

Eby et al. organizational readiness for change scale was not adapted for the field test. Reliability for this scale with this sample of public health professionals was supported by a Cronbach's alpha of .80, the same as Eby et al.'s 2004 findings.

Perceptions of Organizational Performance 4 items reduced to 2 items. The 4 items for perceptions of organizational performance were determined to be unreliable as a scale with this sample; the alpha was near zero. Instead, two individual items (5 and 17) were used given their significant correlations with the final SCOR 8 subscales or possible predictors. Spearman's rho statistic was calculated, given the skewed data for these items. The direction of the correlations was positive and significant for leadership satisfaction with organization's overall performance last year (item 5) and employees respect of organization's performance (item 17). The r^2 indicated that approximately 6% to 20% of the variance in leadership satisfaction with organization overall performance last year (item 5) and employees respect of organization's performance (item 17) for the dependent variables (DVs) was predicted from the Chase SCOR 8 subscales (independent variables, IVs).

Stereotype beliefs about women managers items were not tested for reliability, given that individual items were used for examining hypothesized relationships and providing discriminant evidence.

Checking Assumptions and Conditions

Lastly, various assumptions and conditions were checked before conducting correlation using parametric and nonparametric tests, and for conducting multiple regression as follows:

1. For correlation, data from the Chase SCOR 8 subscales, Eby et al. scale, and stereotype beliefs items met all assumptions and conditions and were all approximately normally distributed; the two perceptions of organizational performance items were not normally distributed, but highly skewed.

2. For multiple regression between the Chase SCOR 8 subscales and the Eby et al. scale, tests for linear relationships were established with the correlations, the errors were normally distributed, and the variance of the residuals was constant (Morgan et al., 2004).

3. For multiple regression between the Chase SCOR 8 subscales and the perceptions of organizational performance items leadership satisfaction with overall performance last year (item 5) and employees respect of organization's performance (item 17), there were no skewed residuals, and assumptions and conditions for meeting multiple regression were acceptable enough to proceed with the analysis, because the skewness was not a major concern to preclude the analysis.

Collinearity statistics were run given the significant correlations across the Chase SCOR 8 subscales (the IVs). Mostly, low tolerance levels for the majority

of the subscales ($<1 - R^2$) indicated collinearity concerns (Leech, Barrett, and Morgan, p. 99, 2008).

Demonstrating Evidence of Reliability and Validity

Analyses from the field test were done using SPSS for determining contributing evidence for reliability and validity. Several scholars informed which evidence demonstrates reliability and validity (*Standards*, 1999; Morgan et al., 2006). Morgan et al. summarize the 1999 standards for educational and psychological testing criteria for types of validity evidence as follows: (a) content of the measure, (b) response processes, (c) internal structure, (d) relations to other variables, including criterion validity (predictive and concurrent types) and convergent and discriminant evidence (relations between a scale and other measures that theory suggests would be or would not be related). Morgan et al. add that statements about reliability "should specify the type(s) of reliability, the strength of the reliability coefficient(s), and the types of participants used" in the sample to provide evidence of reliability (2006, p. 56). Table 12 provides an overview of the evidence.

Table 12

Contributing Evidence for Reliability and Validity

	Method of Answering	**Evidence of:**
Phase 1: Expert Review (Instrument Development, Item Development Step)		
RQ2: Validity?	Qualitative data from Literature Review and comparison of constructs to other instruments	Content validity
Phase 1: Expert Review (Instrument Development, Scale Development Step)		
RQ2: Validity?	*Expert review* reducing of SCOR Survey items by indicating: 1. Importance of items 2. Answerability by employees	Content validity
Phase 2: Online Instrument Usage & Evaluation		
RQ1: Reliability?	Quantitative data from: *Online survey sample* Final Chase SCOR 8 subscales or possible predictors Cronbach's alpha	Internal consistency reliability
RQ2: Validity?	Quantitative data from: *Online survey sample field test* Chase SCOR 8 subscales or possible predictors Pearson's Correlations Relation between Chase SCOR 8 subscales or possible predictors and: 1. Organizational readiness for change with Eby et al. scale (convergent evidence) 2. Perceptions of organizational performance with 2 items (convergent evidence) 3. Stereotype beliefs with 3 items (discriminant evidence)	Construct validity

Establishing Reliability

Reliability is the "consistency of items within a measure and the stability of the measure over time" (Hinkin, 1995, p. 978). "Measurement reliability is a

necessary but not sufficient prerequisite for measurement validity" (Morgan et al., 2006, p.56).

Internal consistency reliability was examined using Cronbach's alpha for evaluating the newly developed Chase SCOR 8 subscales or possible predictors. An alpha above 0.70 indicated that the scale was internally reliable; if an alpha was in the 0.60 – 0.69 range, and there are only a few items in the scale, this was considered marginally acceptable evidence of internal consistency reliability, according to Leech, Barrett, and Morgan (2008).

Establishing Validity

"Validity is concerned with establishing evidence for the use of a particular measure or instrument in a particular setting with a particular population for a specific purpose" (Leech, et al., 2008, p. 57). Evidence for validity included content validity, construct validity, and convergent and discriminant validity demonstrated with relationships between the Chase SCOR 8 subscales or possible predictors and variables of interest.

Content validity establishes the degree to which items are a representative sample of a larger content domain (Brown, 1983). The theoretical basis for content and construct validity was outlined in Chapter 2: Literature Review, further in Appendix A (Literature That Informs SCOR Survey Constructs), Appendix B (Items Adapted or Used from Existing Scales for Initial SCOR Subscales), Appendix C (Instruments Reviewed by Readiness Perspective). The process of establishing content validity was informed by suggested steps

from Gliner and Morgan (2000, p. 320): (a) definition of the concept, (b) literature search to see how this concept is represented in the literature, and (c) items generated that might measure this concept. Content validity is an important component of construct validity because it provides evidence of the degree to which the items of the instrument are relevant to and representative of the targeted constructs.

Construct validity subsumes all categories of validity (Messick, 1993, as cited in Haynes, Richard, & Kubany, 1995). Construct validity is central to instrument design and testing (Mitchell, 1985; Schwab, 1980; Webb & Weick, 1979; as cited in Bagozzi, Phillips, & Youjae, 1991). "Without assessing construct validity one cannot estimate and correct for the confounding influences of random error and method variance, and the results of theory testing may be ambiguous; that is, a hypothesis might be rejected or accepted because of excessive error in measurement, not necessarily because of the inadequacy or adequacy of theory" (Bagozzi, et al., 1991, p. 422).

Factor analysis was the preferred method for analyzing construct validity or providing supporting evidence based on the internal structure of an instrument; however, the sample size was not adequate for exploratory factor analysis, particularly after removing items with some missing data. Factor analysis summarizes the interrelationships and structure among the items in the scales. Before deciding on conducting factor analysis, considerations were

sample size, Pearson's correlations, and Cronbach's alphas to determine which items should be included in the subscales.

Hypothesized relationships were examined between the Chase SCOR 8 subscales and variables of interest for further validity evidence, as follows:

1. Eby et al. (2000) organizational readiness for change scale was presumed to be related in conducting correlation and multiple regression and in providing convergent validity evidence.

2. Perceptions of organizational performance with leadership satisfaction with overall performance last year (item 5) and employees respect of organization's performance (item 17) were presumed to be related in conducting correlation and multiple regression and in providing convergent validity evidence.

3. Stereotype beliefs about women managers with items women managers' ideas challenged more (item 34), women managers have to perform better (item 41), women managers must continually prove themselves (item 55) were presumed to be unrelated in conducting correlation and in providing discriminant validity evidence.

After analyzing (a) the exploratory data and (b) the assumptions and conditions required for conducting correlation and multiple regression, all previously discussed, then the analyses below were conducted from the online survey sample data.

Correlations determined relationships among variables of interest. The value of r along with the degrees of freedom and the significance level were

reported. If there were significant correlations between variables (close to +1 or -1), it would suggest a relationship, considering the effect size as well.

Multiple regression determined how well the independent variables might explain variation in the dependent variable, or how a change in one variable affects another variable (McNabb 2004). Specifically, for this research, the purpose of the multiple regression analyses was to explain how much variation in items from the Chase SCOR 8 subscales or possible predictors (IVs) explains or predicts: (a) organizational readiness for change (DV) measured with the Eby et al. scale, and (b) perceptions of organizational performance (DVs) measured with leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17).

Multiple regression enables researchers to determine the best combination of criterion and predictor variables (Fraenkel & Wallen, 2000). For this research, the combinations were made from the 8 SCOR subscale constructs and variables of interest presumed to be related: (a) The Eby et al. scale and (b) leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) as measures of perceptions of organizational performance. The presumption was that there would be some explanatory qualities to the Chase SCOR scale with these other measures or variables of interest.

Hypothesis Testing

Two main research hypotheses were formulated for this study, as follows:

H1: There is evidence for reliability with the Chase SCOR 8 subscales or possible predictors.

H2: There is evidence for validity with the Chase SCOR 8 subscales or possible predictors.

There is a relationship between the Chase SCOR 8 subscales or possible predictors and the following:

H2.1: Eby et al. scale on organizational readiness for change,

H2.2: Perceptions of organizational performance items.

There is no relationship between the Chase SCOR 8 subscales or possible predictors and the following:

H2.3: Stereotype beliefs about women managers items.

Limitations

Limitations of the Methodology

1. Self-selection where those individuals within organizations who were willing to participate in the online survey sample chose to do so, and they may be characteristically different and possibly more concerned about their employer organization's readiness for change than those unwilling to participate.

2. The sampling method was non-probability given the convenience sample.

3. A sample by employer type (not for profit, university, etc.), not employer organization (specific not-for-profit or university named), with non-representative participation across different departments, divisions, work units, programs, or sites within the same employer organizations makes generalizations to a specific employer organization problematic. Results were summarized by seven different employer organization types, representative of the public health sector.

Limitations of the Analysis

1. The research design was based on data that assessed the practice of practices for managing change and organizational readiness in respondents' employer organizations (without a baseline measure) instead of a longitudinal design over time from which to measure any change in SCOR 8 results.

2. Common method variance concerns due to the measures of two or more variables (soliciting respondents' perceptions of an external organizational environment variable) based on data collected from the same respondents, and the correlations interpreted among them. "Because both measures come from the same source, any defect in that source contaminates both measures, presumably in the same fashion, in the same direction" (Podsakoff & Organ, 1986, p. 533); however, expert reviewers from different employer organizations and an online survey field test of respondents from different employer organizations were used for scale development and for assessing construct validity in this study. Additionally, the online survey field test sample did not

inform the factor structure or grouping of items into subscales. This was accomplished based on an extensive review of the construct domain (literature, other instruments, and expert reviews).

3. Sufficient reliability evidence based on only one type (internal consistency), with other types such as test-retest reliability demonstrating the stability of the measures over time, and inter-rater reliability demonstrating the reliability of the measures with an additional independent sample (Hinkin, 1995).

4. Additionally, the how-to framework of four steps for managing change--pre-planning, planning, implementing, and anchoring--were identified from the literature and not from the statistical analyses.

CHAPTER 4: FINDINGS/RESULTS

Overview

This chapter presents the results of the data analyses described in the previous chapter. This study examined various measurement perspectives (individual readiness, process, content, and context of change) to identify practices for change in organizational readiness (SCOR) that are within the organization's sphere of influence. The results for this exploratory, instrument development study are presented to answer its two main research questions:

1. What is the evidence for reliability of the Chase SCOR subscales or possible predictors?

2. What is the evidence for validity of the Chase SCOR subscales or possible predictors?

Sample Demographic Information

Sample breakdown by demographics and background profiles are presented in Table 13. The largest representation in the sample was: (a) employees relatively new to public health with 1-5 years experience (28%), (b) employer organization type of not-for-profit organizations (44%), and (c) employer size in the 101-500 range (35%). Certain job responsibilities

(management, evaluation, etc.) did not indicate any noteworthy patterns in the exploratory data analysis in comparison to those without those responsibilities.

Table 13

Sample Breakdown by Demographics and Background

Characteristic	Frequency	Percent (%) of Sample
Sample breakdown by experience level		
1-5 years	63	28%
6-10 years	46	21%
11-15 years	31	14%
16-20 years	30	14%
More than 20 years	53	24%
All experience levels	223	100%
Sample breakdown by employer type		
Not for Profit	92	44%
Nursing services agency	22	11%
Organized health dept	9	4%
Professional Association	3	1%
State Health Dept	32	16%
University	29	14%
Other	20	10%
All employment types	207	100%
Sample breakdown by employer size		
25 or less employees	50	24%
26-100 employees	48	23%
101-500 employees	72	35%
501-1,000 employees	5	2%
1,001-3,0000 employees	24	12%
>3,000 employees	8	4%
All sizes	207	100%

Descriptives

Descriptive and exploratory data analyses were done for the Chase SCOR 8 subscales, as outlined in Table 14. Table 14 shows the number (*N*) of participants for items in that subscale. The range of mean scores by type of employer organization and subscale was from 1.67 to 2.38 on a scale of 1 to 5 (with 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree); the sample, overall, scored in the low end. The mean or average score for respondents to items in each subscale was the lowest for work culture health (1.67) and highest in tolerance of change (2.38) subscales. What this means is that practices for managing change and organizational readiness were not common across employer organizations in the sample. One reason for the low mean scores could be that respondents were concerned about their employer organization's readiness for change.

Table 14

Descriptives of Chase SCOR 8 Subscales

SCOR subscale	*N*	Mean	*SD*	Skewness
Communication	206	1.88	0.81	1.16
Initiating change	207	2.25	0.77	0.93
Leadership support	199	1.76	0.82	1.02
Tolerance of change	197	2.38	0.75	0.40
Alignment	203	2.21	1.00	0.45
Learning orientation	198	1.70	0.75	1.25
Work culture health	199	1.67	0.69	1.28
Pressures for change	205	1.90	0.71	0.99

Note. Item mean scores reflect the following response choices: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree

The means scores across the sample and the perceptions of organizational performance items provide further support to the speculation that respondents had some concerns about their employer organization's readiness for change--scores were also on the low end. The range of mean scores was 1.2 to 2.6 for leadership satisfaction with overall performance last year (item 5) and 1.1 to 2.3 for employees' respect of organization's performance (item 17). What this means is that there was low agreement in the public health sector that: (a) leaders were satisfied with overall performance last year and (b) employees respected the performance of their organizations. Public health organizations

operate in a political environment undergoing perpetual change and cyclical funding.

Table 15 outlines the descriptives for testing hypothesized relationships. The distribution curve was assumed to be approximately normal. The skewness was not that much more than +1.0 (nor less than -1.0) and, therefore, the distributions were not markedly skewed with two subscales (learning orientation and work culture health) at 1.25 and 1.28. Additionally, the means, medians, and modes are similar, so the assumption of approximate normality was further supported (Morgan, et al., 2004). The assumption of normality prevailed in reviewing the descriptives in Table 15 for the variables of interest for testing hypothesized relationships, except for leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) for perceptions of organizational performance. To further check this assumption in addition to the skewness value, the mean, median, and mode were examined for all variables of interest for being approximately equal (Morgan et al., 2004). Leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) were determined to be not normally distributed, based on Morgan et al.'s guidelines "if the skewness is less than plus or minus one (< +/- 1.0) the variable is at least approximately normal" (2004, p. 57); therefore, nonparametric statistics were used in conducting further analyses with these data.

Table 15

Descriptives for Testing Hypothesized Relationships

	N	Mean	*SD*	Skewness
Organizational readiness for change, Eby et al. scale (9 items)	199	3.19	.66	.56
Perceptions of organizational performance Leadership satisfaction with overall performance last year (item 5)	177	1.76	1.44	1.68
Perceptions of organizational performance Employees' respect of organization's performance (item 17)	173	1.43	.86	2.42
Stereotype beliefs about women managers Women managers' ideas challenged more (item 34)	164	3.08	1.11	-.08
Stereotype beliefs about women managers Women managers have to perform better (item 41)	164	2.93	1.11	-.04
Stereotype beliefs about women managers Women managers must continually prove themselves (item 55)	164	3.09	1.09	-.08

Results by Research Question

Evaluation of the instrument from the field test usage phase demonstrated evidence of reliability and validity of the Chase SCOR 8 subscales with approaches as follows:

1. Reliability: Cronbach's alpha for internal consistency reliability,
2. Content validity: evidence from literature, instruments and expert reviews;

3. Convergent validity: hypothesized positive relationship with the Eby et al. organizational readiness for change scale, using correlation and multiple regression;

4. Convergent validity: hypothesized positive relationship with perceptions of organizational performance items, using correlation and multiple regression;

5. Discriminant validity: hypothesized low or negative relationship with stereotype beliefs about women managers items, using correlation.

Research Question 1:

What is the evidence for reliability of the Chase SCOR 8 subscales or possible predictors?

Table 16 provides the unstandardized Cronbach's alpha for each of the Chase SCOR 8 subscales. Most of the alphas are above .70 indicating internal reliability of the subscales with this sample from the public health sector, with only leadership support (.61), alignment (.60) and learning orientation (.67) marginally acceptable above .60 considering that they only have 2 to 4 items.

Table 16

Cronbach's Alpha Findings For Chase SCOR 8 Subscales

SCOR SUBSCALE	Number of Items	Cronbach's Alpha
Communication	5	.74
Initiating change	9	.76
Leadership support	3	.61
Tolerance of change	5	.74
Alignment	2	.60
Learning orientation	4	.67
Work culture health	7	.81
Pressures for change	9	.79

Research Question 2:

What is the evidence for validity of the Chase SCOR 8 subscales or possible predictors?

Content Validity

Several bodies of evidence contributed to content validity for the SCOR 8 subscales: the Literature Review (also see Appendix A) and the other instruments review (Appendix B). Details of these item and scale development steps, and data collection in the expert review, were previously described in chapter 3.

Construct Validity

Several approaches were followed to demonstrate evidence for construct validity, including hypothesized relationships of the Chase SCOR 8 subscales with variables of interest: (a) the Eby et al. scale, (b) perceptions of organizational performance items, and (c) stereotype beliefs about women managers items. Convergent validity evidence was based on correlations and multiple regression for both (a) the Eby et al. scale and (b) perceptions of organizational performance items. Intercorrelations of the 8 subscales or possible predictors were also examined for multicollinearity concerns. Discriminant validity evidence was based on correlations with (c) stereotype beliefs about women managers' items.

Hypothesized relationships were examined between the Chase SCOR 8 subscales and the following variables of interest:

1. Eby et al. organizational readiness for change scale (convergent validity evidence based on correlations and multiple regression),

2. Perceptions of organizational performance items (convergent validity evidence based on correlations and multiple regression),

3. Stereotype beliefs about women managers items (discriminant validity evidence based on correlations).

Intercorrelations of the Chase SCOR 8 subscales were examined before conducting other analyses as to whether the predictor variables or the Chase SCOR 8 subscales (IV) contained similar information considering the

multicollinearity concerns. The direction of the subscale-subscale correlations were all positive, r (189 – 205) = .33 to.76, p <.01 level. Using Morgan et al.'s (2006) guidelines, the effect size or strength of these relationships is typical to much larger than typical. The Pearson correlation squared, r^2, indicated that approximately 11% to 58% of the variance for each of the Chase SCOR 8 subscales can be predicted by their association with another subscale. Table 17 summarizes these intercorrelations.

Table 17

Intercorrelations of Subscales

SCOR Subscale	Comm	Change	Lead	Toler	Align	Learn	WCultH	Pressures
Communication	1	--	--	--	--	--	--	--
Initiating change	.68**	1	--	--	--	--	--	--
Leadership support	.63**	.57**	1	--	--	--	--	--
Tolerance of change	.67**	.76**	.58**	1	--	--	--	--
Alignment	.33**	.41**	.36**	.46**	1	--	--	--
Learning orientation	.59**	.52**	.44**	.60**	.47**	1	--	--
Work culture health	.55**	.54**	.58**	.58**	.42**	.60**	1	--
Pressures for change	.70**	.71**	.57**	.73**	.48**	.71**	.62**	1

**$p < 0.01$, two-tailed.

Multicollinearity was a concern considering that the independent variables measured by the Chase SCOR 8 subscales were highly correlated with each other and not very independent. Mostly low tolerance levels for the majority of the subscales ($<1 - R^2$) indicated collinearity according to Leech et al.'s guidelines (2008, p. 99).

Hypothesized relationships: Correlation findings and discussion related to the Chase SCOR 8 subscales and each of these enumerated variables of interest follow:

1. For items in the Eby et al. organizational readiness for change scale, theory suggests that practices for managing change and organizational readiness would contribute to "employee perceptions of the organization's readiness for change...based on an individual's unique interpretation of the organization's context," assessed by the Eby et al. scale (2000, p. 422, 429). The Eby et al. scale does not measure the same comprehensive dimensions or specific practices that were identified in the literature as contributing to change in organizational readiness within the organization's sphere of influence; therefore, it is not a criterion measure from which to make comparisons.

To investigate if there was a relationship between the Chase SCOR 8 subscales and an established measure called "organizational readiness for change," presumed to be related based on the literature, correlations were conducted for contributing convergent evidence. Correlations were computed for the Chase SCOR 8 subscales with the Eby et al. scale. Table 18 shows that all 8

subscales were significantly correlated with the Eby organizational readiness for change scale.

Table 18

Correlations for Chase SCOR 8 Subscales and Eby et al. Scale

SCOR Subscale	Eby et al. Scale		
	r	*p*	*df*
Communication	.39**	<.001	197
Initiating change	.28**	<.001	197
Leadership support	.34**	<.001	192
Tolerance of change	.30**	<.001	191
Alignment	.24**	<.001	197
Learning orientation	.33**	<.001	195
Work culture health	.37**	<.001	196
Pressures for change	.32**	<.001	197

** $p < .01$, two-tailed.
Note: Eby et al. mean: 3.19; *SD* = .66; *N* =199

The direction of the correlations was positive for all 8 subscales. The strongest positive correlation, which would be considered in the social sciences to be a typical effect size (Morgan et al., 2006), was between communication and the Eby et al. scale, $r(199) = .39$, $p < .01$. This means that respondents who tended to agree with the communication subscale also agreed with the Eby et al. scale assessing employee perceptions of the organization's readiness for change or organizational readiness for change. In summary, the Pearson

correlation squared, r^2, indicated that approximately 6% to 15% of the variance in the Eby et al. scale (DV) can be predicted from the Chase SCOR 8 subscales (IV); 15% variance in the Eby et al. scale (DV) can be predicted from the communication subscale in particular.

2. For items regarding perceptions of organizational performance, the literature suggests that practices contributing to change in organizational readiness also would contribute to organizational performance.

To investigate if there was a statistically significant relationship between the Chase SCOR 8 subscales and perceptions of organizational performance, correlations were computed. Leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) were skewed, which violated the assumption of normality; therefore, the Spearman rho statistic was calculated. Correlations were computed for the Chase SCOR 8 subscales and leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17). Table 19 shows that all 8 subscales were significantly correlated with leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17). These correlations contributed convergent validity evidence.

Table 19

Correlations for Chase SCOR 8 Subscales and Perceptions of Organizational Performance Items (5 and 17)

SCOR Subscale	Perceptions of Organizational Performance					
	Leadership Satisfaction with Overall Performance Last Year (Q5)			Employees' Respect of Organization's Performance (Q17)		
	r_s	p	df	r_s	p	df
Communication	.45**	<.001	175	.38**	<.001	171
Initiating change	.46**	<.001	175	.34**	<.001	171
Leadership support	.37**	<.001	170	.32**	<.001	167
Tolerance of change	.47**	<.001	168	.41**	<.001	168
Alignment	.32**	<.001	172	.25**	<.001	170
Learning orientation	.34**	<.001	170	.41**	<.001	169
Work culture health	.33**	<.001	171	.41**	<.001	171
Pressures for change	.46**	<.001	174	.37**	<.001	171

**$p < .01$, two-tailed.
Note: Item wording as follows:
Item 5 "Leadership (e.g. top management decision makers) was very satisfied with the overall performance of the organization last year."
Item 17 "Employees respect the performance of our organization."

The direction of the correlations was positive for leadership satisfaction with overall performance last year (item 5) and employees' respect of the organization's performance (item 17) and all 8 subscales, which means that respondents who tended to agree with the statements about leadership being satisfied and employees respecting the overall performance of their organizations

also tended to agree with the practices for managing change and organizational readiness being practiced in their employer organizations across the Chase SCOR 8 subscales. The strongest positive correlations with leadership satisfaction with overall performance last year (item 5), which would be considered a typical to larger than typical effect size (Morgan, et al. 2006), were with communication, initiating change, tolerance of change, and pressures for change, $r_s(168 - 175) = .45$ to.46, $p < .01$. This means that respondents who tended to agree with the practices specified in those subscales also tended to agree with leadership satisfaction with overall performance last year (item 5). The strongest positive correlations with employees' respect of organization's performance (item 17), which also would be considered a typical to larger than typical effect size (Morgan et al., 2006), were with tolerance of change, learning orientation, and work culture health, r_s $(168 - 171) = .41$, $p < .01$. This means that respondents who tended to agree with practices specified in those subscales also tended to agree with employees' respect of organization's performance (item 17). In summary, the Pearson correlation squared, r^2, indicated that approximately 6% to 22% of the variance in leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17), can be predicted from the Chase SCOR 8 subscales (IVs).

3. For items regarding stereotype beliefs about women managers, theory did not suggest that this gender distinction in management would be related to practices for managing change and organizational readiness. This section and

Table 20 provide output and a discussion of the results exploring relationships of the Chase SCOR 8 subscales with items from the Moore et al. scale on stereotype beliefs about women managers. Correlations were conducted for contributing discriminant evidence.

Table 20

Correlations for SCOR 8 Subscales and Stereotype Beliefs about Women Managers Items (34, 41, and 55)

SCOR Subscale	Stereotype Beliefs Items								
	Women managers' ideas challenged more (Q34)			Women managers have to perform better (Q41)			Women managers must continually prove themselves (Q55)		
	r	*p*	df	*r*	*p*	df	*r*	*p*	df
Communication	-.01	.85	179	-.03	.70	178	.04	.59	166
Initiating change	-.03	.68	179	-.08	.32	178	.07	.36	166
Leadership support	-.07	.38	174	-.04	.58	173	-.01	.91	162
Tolerance of change	-.05	.55	179	-.09	.20	178	-.03	.61	166
Alignment	-.18*	.02	179	-.22**	.00	178	-.14	.06	166
Learning orientation	-.14	.07	178	-.18	.02	177	-.15	.06	165
Work culture health	-.18*	.01	179	-.24**	.00	178	-.18*	.01	166
Pressures for change	-.04	.63	179	-.01	.85	178	.02	.78	166

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

To investigate if there was a statistically significant relationship between the Chase SCOR 8 subscales and variables hypothesized to be unrelated (stereotype beliefs about women managers' items), correlations were computed. Correlations were computed for the Chase SCOR 8 subscales and three stereotype beliefs items. None of the 8 subscales were significantly positively correlated with the stereotyped beliefs about women managers items; all the correlations had negative signs, with only a few significantly correlated.

Exceptions were with two subscales as follows: alignment and work culture health were significantly negatively correlated with women managers' ideas challenged more (item 34) and women managers have to perform better (item 41); only the work culture health subscale was negatively correlated with women managers must continually prove themselves (item 55). The highest negative correlation was between work culture health and item 41, $r(178) = -.24$, $p < .01$, with a smaller than typical effect size (Morgan et al., 2006). In summary, the Pearson correlation squared, r^2, indicated that approximately 0% to 6% the variance in items 34, 41, and 55 (DVs) can be predicted from the Chase SCOR 8 subscales (IVs). Essentially, these are weak relationships, and the Chase SCOR 8 subscales (IVs) predicted very little of the variability in the stereotype beliefs about women managers—as hypothesized.

Hypothesized relationships: Multiple regression findings and discussion related to the Chase SCOR 8 subscales and each of the variables of interest follow. Several multiple regression techniques were used to determine

the combinations of predictors from the Chase SCOR 8 subscales or possible predictors (IVs) with variables of interest (DVs) presumed to be related based on the literature: (a) the Eby et al. scale for organizational readiness for change and (b) leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17) assessing perceptions of organizational performance. Assumptions and conditions for conducting multiple regression were met for all variables of interest. The Eby et al. scale was normally distributed, but there were some concerns about skewness (1.68 and 2.42) with the perceptions of organizational performance items.

Further, collinearity statistics were run and were somewhat problematic, given the relatively high correlations between the SCOR 8 subscales or possible predictors (IVs), with positive, significant correlations in the range of r (189 to205) = .33 to.76, $p < .01$. Most of the 8 subscales' tolerance levels were low ($<1 - R^2$), according to Leech et al. (2008), indicating some problems with multicollinearity. Strong relationships across the subscales and variables measuring dimensions of the organizational context or culture that contribute to managing change and organizational readiness are not surprising.

Each of the means for the subscales or independent variables (final Chase 8 subscales or possible predictors) were regressed with the dependent variables [Eby et al. scale and leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17)] to

form the regression equations. Distinctions between the techniques conducted are summarized as follows: (a) simultaneous regression using SPSS includes all the independent variables (IVs) in the equation simultaneously, which also determines the maximum multiple correlation squared, R^2, value that could be attained by the next two methods; (b) stepwise using SAS adds one IV from the 8 subscales or independent variables at a time in the equation to evaluate how important each was in predicting the Eby et al. scale (DV) or in predicting perceptions of organizational performance (DVs), up to the maximum multiple correlation squared, R^2, value derived from including all the subscales in the equation simultaneously in SPSS; (c) best subsets using SAS was also used to verify that stepwise produced the best equation looking at every set of two, three or four variables as it contributes up to the maximum R squared value. For example, if stepwise regression yielded an equation with two independent variables, the best subsets determined if any other combination of two variables was better than what stepwise found. Only those of the Chase SCOR 8 subscales or possible predictors contributing significantly to the variance accounted for by the regression equation were included. Adding one variable at a time identified the predictive value of each construct and potentially, informs further SCOR scale revisions.

Findings using these three multiple regression techniques by the variables of interest are outlined below.

1. For the Eby et al. scale, regression findings were as follows:

With simultaneous multiple regression in SPSS, the multiple correlation coefficient *R* using all the predictors simultaneously of .51 (R^2 = .26) and the adjusted multiple correlation squared, R^2, was .23, meaning that 23% of the variance in organizational readiness for change using the Eby et al. scale can be explained by the Chase SCOR 8 subscales. Only the communication subscale (beta = .41) significantly added to the prediction of organizational readiness for change using the Eby et al. scale when the other variables were already considered.

Using the stepwise technique in SAS, one variable, the communication subscale, significantly contributed a R^2 = .21 when entered into the equation; with two variables, adding the work culture health subscale, yielded a R^2 = .24; with three variables, adding the initiating change subscale, yielded a R^2= .25. Therefore, three subscales--communication, work culture health, and initiating change--explain the proportion of variance in the dependent variable, the Eby et al. scale, using this technique. The addition of other subscales did not significantly contribute to the explanation of variability any further.

Using best subsets regression in SAS, the final model was the same as the stepwise technique: Communication, work culture health and initiating change contributed best to the equation predicting the Eby et al. scale (DV).

2. For leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17), the items

regarding perceptions of organizational performance, regression findings were as follows:

For leadership satisfaction with overall performance last year (item 5), using simultaneous multiple regression in SPSS, the multiple correlation coefficient R was .56 (R^2 = .32) and the adjusted multiple correlation squared, R^2, was .28, meaning that 28% of the variance in perceptions of organizational performance using item 5 can be explained using the model of all Chase SCOR 8 subscales combined. According to Morgan et al. (2006), this is a larger than typical effect size. The ANOVA table showed that F = 9.11 (p < .001) and is significant. This indicated that the combination of the predictors (Chase SCOR 8 subscales) significantly predict perceptions of organizational performance (DV) using leadership satisfaction with overall performance last year (item 5) F(8, 157) = 9.11, p < .001; however, for leadership satisfaction with overall performance last year (item 5), only the communication subscale (beta = .27) and learning orientation (beta = -.23; inversely related) significantly contributed (p < .05) to the prediction of perceptions of organizational performance when the other variables were already considered based on the beta weights. Learning orientation in combination with the other independent variables significantly added to the prediction of organizational performance, inversely with leadership satisfaction with overall performance last year (item 5) but not so with employees' respect of organization's performance (item 17). With so many strong and significant correlations and multicollinearity concerns across the

subscales, combined with the skewness concerns, it was: (a) not unexpected that there were not many significant betas and (b) difficult to determine the separate effects of each independent variable on the dependent variables of interest.

For leadership satisfaction with overall performance last year (item 5), using the stepwise technique in SAS, one variable, the communication subscale, yielded a *R* squared = .24 when entered into the equation; with two variables, adding the tolerance of change subscale, contributed a R^2 = .28; with three variables, adding the learning orientation subscale (inversely related), yielded a R^2 = .29; when adding the fourth variable, there was not a significant improvement, from .29 to .31; therefore, the three subscales, communication, tolerance of change, and learning orientation (inversely related) explained 29% of the variance in the dependent variable, leadership satisfaction with overall performance last year (item 5), using this technique. The addition of other subscales did not contribute to the explanation of variability any further.

For leadership satisfaction with overall performance last year (item 5), using best subsets regression in SAS, the final model was the same as the stepwise technique: communication, tolerance of change, and learning orientation (inversely related) contributed to the equation predicting leadership satisfaction with overall performance last year (item 5).

For employees' respect of organization's performance (item 17), with simultaneous multiple regression in SPSS, the multiple correlation coefficient *R*

using item 17 of .50 (R^2 = .25) and the adjusted multiple correlation squared, R^2, was .21, meaning that 21% of the variance in perceptions of organizational performance using employees' respect of organization's performance (item 17) can be explained by the Chase SCOR 8 subscales combined or model. According to Morgan et al. (2006), this is a larger than typical effect size. The ANOVA table showed that F = 6.148 (p < .001) and is significant. This indicated that the combination of the predictors (Chase SCOR 8 subscales) significantly predicted perceptions of organizational performance using employees' respect of organization's performance (item 17), F(8, 157) = 6.15, p < .001. For employees' respect of organization's performance (item 17), only the tolerance of change subscale (beta = .27) and work culture health (beta = .26) significantly added (p < .05) anything to the prediction of perceptions of organizational performance when the other variables were already considered.

For employees' respect of organization's performance (item 17), using the stepwise technique in SAS, one variable, the work culture health subscale, contributed a R^2 = .20 when entered into the equation; with two variables, adding the tolerance of change subscale, yielded a R^2 = .24; with three variables, adding the learning orientation subscale, yielded a R^2 = .25; therefore, the three subscales, work culture health, tolerance of change, and learning orientation (not inversely with item 17 as with item 5) explained the proportion of variance in the dependent variable, item 17, using this technique. The

addition of other subscales did not contribute to the explanation of variability any further.

For employees' respect of organization's performance (item 17), using best subsets regression in SAS, the final model was the same as the stepwise technique: work culture health, tolerance of change, and learning orientation (not inversely as item 5) contributed to the equation predicting item 17.

Summary of Key Findings

This chapter presented the results of data analyses and statistical tests for contributing evidence of reliability and validity for the new Chase SCOR 8 subscales. Reliability for the new 8 subscales was acceptable. Content validity from the literature, instruments, and expert reviews contributed theoretical and practical support. Convergent and discriminant validity evidence was noteworthy, with results as follows:

1. Convergent validity with Eby et al. scale: The direction of the correlations with all 8 subscales and the Eby et al. scale were all positive and significant. The strongest positive correlation was between the communication subscale and the Eby et al. scale, with a typical effect size, using Morgan et al.'s (2006) guidelines. When examining the relationship between the 8 subscales and the Eby et al. scale using multiple regression techniques, the overall equation was significant with a larger than typical effect size. Three subscales: Communication, work culture health, and initiating change significantly contributed to the equation predicting the Eby et al. scale (DV).

2. Convergent validity with perceptions of organizational performance items: The direction of the correlations was positive and significant with all 8 subscales and leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17), with typical to larger than typical effect sizes, using Morgan et al.'s (2006) guidelines. When examining the relationships between the 8 subscales and the perceptions of organizational performance items leadership satisfaction with organization's overall performance last year (item 5) and employees' respect of organization's performance (item 17) using multiple regression techniques, the overall equations were significant with larger than typical effect sizes (2006).

For leadership satisfaction with overall performance last year (item 5), the strongest positive correlations were with communication, initiating change, tolerance of change, and pressures for change subscales. In multiple regression, the communication, tolerance of change, and learning orientation subscales contributed significantly to the equation predicting leadership satisfaction with overall performance last year (item 5), though learning orientation was related inversely.

For employees' respect of organization's performance (item 17), the strongest positive correlations were with tolerance of change, learning orientation, and work culture health subscales. In multiple regression, the work culture health, tolerance of change, and learning orientation subscales contributed significantly to the equation predicting item 17.

3. Discriminant validity with stereotype beliefs about women managers' items: Correlations were mostly nonsignificant between them and the Chase SCOR 8 subscales. There were a few exceptions: the alignment, work culture health, and work culture health subscales. Alignment and work culture health were significantly negatively correlated with women managers' ideas challenged more (item 34) and with women managers have to perform better (item 41), but only the work culture health subscale was correlated with women managers must continually prove themselves (item 55), with smaller than typical effect sizes, using Morgan et al.'s guidelines (2006).

Table 21 summarizes the key findings. Additionally, steps for managing change in Figure 5--pre-planning, planning, implementing, and anchoring--were identified from the literature and not from any statistical analyses. The discussion that follows, details about the Chase SCOR 8 Survey, and Figure 5 provide more information.

Table 21

Summary of Key Findings

	Reliability	Evidence for Validity								
		Hypothesized Relationships with Other Variables of Interest								
		Eby et al. Organizational Readiness for Change Scale		Perceptions of **Organizational Performance** Items				**Stereotype Beliefs** of Women Managers Items		
SCOR Subscale	Cronbach's Alpha	*r*	R^2	*Q5* r_s	R^2	*Q17* r_s	R^2	*Q34* *r*	*Q41* *r*	*Q55* *r*
Communication	.74	.39**	.21*	.45**	.24*	.38**				
Initiating change	.76	.28**		.45**		.34**				
Leadership support	.61	.34**	.25*	.37**		.32**				
Tolerance of change	.74	.30**		.47**	.28*	.41**	.24*			
Alignment	.60	.24**		.32**		.25**		-.18*	-.22**	
Learning orientation	.67	.33**		.34**	-.29*	.41**	.25*			
Work culture health	.81	.37**	.24*	.33**		.41**	.20*	-.18*	-.24**	-.18*
Pressures for change	.79	.32**		.46**		.37**				

*$p < 0.05$, two-tailed. **$p < 0.01$, two-tailed.

Note. Stepwise regression models were as follows for the Eby et al. scale DV: communication, initiating change and work culture health subscales contributed to the equation; Organizational Performance Item 5 DV: communication, tolerance, and learning orientation (though inversely); Item 17 DV: tolerance, learning orientation and work culture health.

CHAPTER 5: DISCUSSION

Introduction

The purpose of this study was to develop measures for the Chase SCOR 8 Survey of specific practices for managing change that incorporate principles of readiness across individual, group, process and organization levels. The aim of the Survey is to build a readiness foundation—a distinct type of organizational culture or climate that is ready for change. Discussed in this chapter are: (a) the implications of the study findings, (b) more details about the Chase SCOR 8 Survey and its subscales, including its comparison to other instruments, distinctiveness from other instruments, and future instrument improvements; (c) limitations of the study, (d) recommendations for future research, (e) implications of the research, and (f) conclusion.

Implications of the Study Findings

This instrument development study contributed evidence of reliability and validity for the new Chase SCOR 8 subscales. Results indicated acceptable reliability of the Chase SCOR 8 subscales: communication, initiating change, leadership support, tolerance of change, alignment, learning orientation, work culture health, and pressures for change. Results indicated support for two types of validity by examining relationships between the Chase SCOR 8 subscales (IVs) with three variables of interest (DVs), as follows:

1. Organizational readiness for change using the Eby et al. scale (2000),

2. Perceptions of organizational performance using leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17),

3. Stereotype beliefs about women managers using items women managers' ideas challenged more (item 34), women managers have to perform better (item 41), and women managers must continually prove themselves (item 55).

Hypothesized Relationships: Convergent Validity

For convergent validity with the Eby et al. scale, there were positive correlations of mostly typical effect sizes and multiple regression findings of larger than typical effect sizes; for the perceptions of organizational performance items, there were positive correlations of typical to larger than typical effect sizes and multiple regressions findings of larger than typical effect sizes (Morgan et al., 2006).

Hypothesized Nonsignificant Relationship: Discriminant Validity

For discriminant validity with the stereotype beliefs about women managers' items, there were mostly nonsignificant relationships between them and the Chase SCOR 8 subscales, with smaller than typical effect sizes (Morgan et al., 2006).

Other Instrument-Related Findings

1. Relatively high correlations or homogeneity between the 8 subscales. This raised concerns about multicollinearity and explained variance using the subscales/independent variables (IVs); however, the 8 subscales that measure practices for managing change and organizational readiness were expected to be related when considering organizational dimensions such as communication and leadership support. The 8 subscales were identified from the literature, instruments and expert reviews, and whether there were indeed 8 factors or fewer was not demonstrated with exploratory or confirmatory factor analysis.

2. Five of the 8 subscales found were to be significant "predictors" of at least one of the dependent variables.

Significant Contribution of 5 Total of the 8 Subscales in Multiple Regression

Figure 4 depicts which of the 8 subscales explain any variance in the dependent variables of interest using the three multiple regression techniques. The shaded subscales (IVs) refer to the final models that were significant in explaining variance, and the different line types refer to the variables of interest (DVs), as indicated at the bottom.

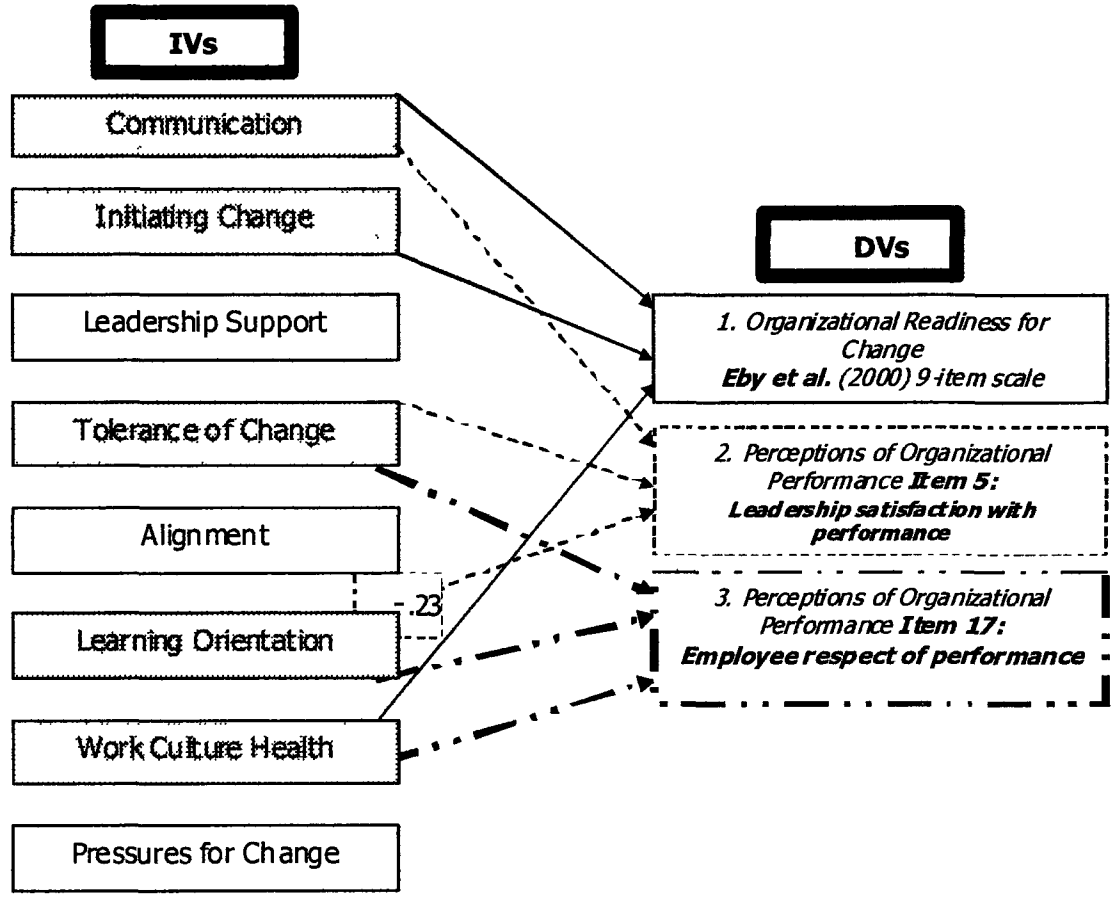

Figure 4. *Regression results (convergent validity).*
Note. Final models (using SPSS, stepwise and best subsets) were shaded and as follows:
Eby et al.: Solid line
Item 5: Dashed line
Item 17: Dark dashed line

The multiple regression between the independent variables (IVs) and all the dependent variables (DVs) of interest hypothesized to be related (Eby et al. scale, leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17), yielded 5 out of the 8 subscales as predictors of at least one DV, with a maximum of 3 contributing significantly to the regression equations for each of the dependent variables; however, there were some multicollinearity concerns. Using all 8 Chase SCOR

subscales, the adjusted multiple correlation squared, R^2, explained 23% of the variance in organizational readiness for change using the Eby et al. scale (DV), 28% of the variance in perceptions of organizational performance using leadership satisfaction with overall performance last year (item 5), and 21% of the variance in organizational performance using employees' respect of organization's performance (item 17), yielding a fairly adequate explanatory or predictive model with the 8 subscales (IVs). Five subscales were found to be predictors in at least one of the multiple regression models as follows: communication, initiating change, tolerance of change, and work culture health, with learning orientation a negative predictor (as noted in the Figure 4 with the negative -.23 beta weight). Given the relatively high correlations among the 8 subscales/IVs, it was not surprising that the contribution of each subscale was not detected in the multiple regression analyses; however, each individual correlation established positive linear and significant relationships between all independent variables (IVs) and all dependent variables (DVs) hypothesized to be related (Eby et al. and organizational performance) that were used in the multiple regression.

There were concerns with the inverse relationship between the learning orientation subscale and leadership satisfaction with overall performance last year (item 5), (beta = -.23), found in each of the three multiple regression techniques (SPSS, stepwise, and best subsets). With the highly correlated IVs, and given the complexities with multiple regression and the number of variables,

when all subscales or IVs were entered into the equation, learning orientation significantly, but inversely, added to the equation. This could indicate that respondents who assessed their organizations' leadership as satisfied with the overall performance of their organizations last year were in relative agreement with the other subscales and in less agreement with the learning orientation subscale. What this could mean is that respondents where leadership was satisfied with performance were in organizations with less strong learning orientations, in other words, the status quo was acceptable, and the need for learning not particularly strong; however, the variance explained in the dependent variables by the independent variables without considering their intercorrelations was not fully examined with an exploratory factor analysis, as previously discussed in chapter 3. These hypothesized findings are just that. There may be a reason for the negative correlation that is not explained here.

The interpretation of beta values with relatively high intercorrelated independent variables was somewhat problematic; however, the relationships between the 8 subscales (IVs) with organizational readiness for change and organizational performance (DVs) were already demonstrated with the correlations, and are not contradictory to existing research. It is possible that: (a) The 8 subscales could be reduced to 5, (b) results with different samples would suggest stronger predictive qualities for all 8 subscales, and (c) more robust dependent variables with more items could yield stronger findings. Table 22 presents the practically significant findings, noting the effect sizes.

Table 22

Summary of Practically Significant Findings

	Reliability	Evidence for Validity								
		Hypothesized Relationships with Other Variables of Interest								
		Eby et al. Organizational Readiness for Change Scale		Perceptions of **Organizational Performance** Items				**Stereotype Beliefs** of Women Managers Items		
				Q5		*Q17*		*Q34*	*Q41*	*Q55*
SCOR Subscale	Cronbach's Alpha	*r*	*R*	r_s	*R*	r_s	*R*	*r*	*r*	*r*
Communication	Okay	T	LT	T - LT	LT	T	T - LT			
Initiating change	Okay	T		T - LT		T				
Leadership support	Marginal	T		T		T				
Tolerance of change	Okay	T		T - LT		T - LT				
Alignment	Marginal	ST		T		ST		ST	ST	
Learning orientation	Marginal	T		T		T - LT				
Work culture health	Good	T		T		T - LT		ST	ST	ST
Pressures for change	Okay	T		T - LT		T				

Note. Alpha >.80 = good, 70-74=okay, .60-.69=marginal
Effect Size Coding: ST: Smaller than Typical, T: Typical, LT: Larger than Typical (Morgan et al., 2006, adaptation from Cohen's 1988 guidelines)

More Details about the Chase SCOR 8 Survey Instrument

The Chase SCOR 8 Survey consists of 8 subscales identified as practices for managing change and organizational readiness, based on construct domain evidence from the literature, instruments, and expert reviews. Several bodies of literature were reviewed, including: readiness for change, organizational culture, organizational learning, organizational change, and, lastly, planned change. An overview of contributors from the Literature Review who informed the constructs for the Chase SCOR 8 subscales is in Table 23.

Instruments reviewed for potential item adaptation and usage are presented in detail in Appendix C. The instruments review followed the same conceptual framework or readiness measurement perspectives of individual, context, content, and process established by Holt, et al. 2007. Appendix C also includes a complete list of references for all the instruments reviewed; an overview of the instruments reviewed by measurement perspective is in Table 24.

Table 23

Literature That Informed the Chase SCOR 8 Final Subscales

8 Subscales	Informing Contributors
Communication	Anderson and Anderson (2001); Lewin (1951); Schein, (1987); Senge (1990): Armenakis, Harris and Mossholder (1993): Armenakis, et al. (1993); Bandura (1982); Burke (1994); Cummings and Worley (2001); Daly (1995) and Mayer et al. (1995); Eby (2000); Galpin (1996); Lewin (1951); Mayer et al. (1995) (cited in Chawla, 2004, p. 487); Miller et al. (1994); Miller (2000); Miller and Monge (1985); Moss Kanter, et al. (1992); Nadler and Tushman (1989); Pfeiffer and Jones (1978); Preskill and Torres (1999); Schein (2004); Senge (1990); Spector (1989); Stewart (1994); Wanberg and Banas (2000)
Initiating Change	Beckhard and Harris (1987); Beckhard and Pritchard (1992); Bennis, et al., (1969); Lewin (1951); Mink et al. (1994); Turner and Crawford (1998); Vollmann (1996)
Leadership Support	Beckhard and Pritchard (1992); Burke (1994); Galpin (1996); Mink (1994); Moravec (1995); Moss Kanter, et al. (1992); Pfeiffer and Jones (1978); Pheysey (1993); Preskill and Torres (1999); Schein (2004); Senge (1990); Stewart (1994); Vroom (1964)
Tolerance of Change	Burke (1994); Fiol and Lyles (1985); Lewin (1951); McNabb and Sepic (1995); Pfeiffer and Jones (1978); Pheysey (1993); Preskill and Torres (1999); Schein (1987); Schein (2004)
Alignment	Beckhard and Pritchard (1992); Beer (1980); Galpin (1996); Mink (1994); Moss Kanter, et al. (1992); Schein (1985, 1990)
Work Culture Health	Armenakis, et al. (1993); Armenakis, et al., 1993; Cobb et al., 1995; Fiorelli and Margolis (1993); McManus, et al., 1995; McNabb and Sepic (1995); Mink (1994); Pareek (1988); Pheysey (1993); Porras (1987); Preskill and Torres (1999); Riggs and Knight (1994); Schein (1985, 1990, 2004); Senge (1990); Sheppard (1993); Stewart (1994); Wanberg and Banas (2000)
Learning Orientation	Beckhard and Pritchard (1992); Fiol and Lyles (1985); Galpin (1996); Lewin (1951); Lewin (1951); Mink et al. (1994); Mohrman and Cummings (1989); Moravec (1995); Pareek (1988); Pfeiffer and Jones (1978); Preskill and Torres (1999); Redding and Catalanello (1994); Schein (2004); Senge (1990); Stewart (1994)
Pressures for Change	Armenakis et al. (1993); Beckhard and Harris (1987); Beckhard and Pritchard (1992); Beer (1980); Beer, 1980; Bennis (1969); Burke (1994); Chawla (2004); Cobb et al., (1995); Coch and French (1948); Galpin (1996); Gilley and Maycunich, 2000; Lewin (1951); McNabb and Sepic, 1995; Mink et al. (1994); Moravec (1995); Moss Kanter, et al. (1992); Moss Kanter, et al. 1992; Peach, Jimmieson and White (2005); Pettigrew (1987); Pfeiffer and Jones (1978); Porras (1987); Radin and Coffee (1993); Rizzo, House and Lirtzman (1970); Schein (1987); Schein (1987); Schein (2004); Stewart (1994); Vollmann (1996); Wanberg and Banas (2000)

Table 24

Instruments Reviewed by Readiness Measurement Perspective

INDIVIDUAL

1. Commitment to Organizational Change, Herscovitch and Meyer (2002)
2. Readiness for Change, Holt (2002), Holt et al., (2007)
3. Stages of change in psychotherapy scale, McConnaughy, Prochaska and Velicer (1983); Prochaska and DiClemente (1983)
4. Organizational Readiness for Change, Eby et al. (2002)
5. Organizational Readiness for Change, Cunningham et al. (2002)
6. Openness Toward Change, Miller, Johnson and Grau (1994)
7. Readiness for Change scale, Hanpachern (1997)

CONTEXT

8. Management Self-Improvement Survey (MSIS), Keith (1986)
9. Lay of the Land Survey, Burke, et al. (1996)
10. Empowerment-Readiness Survey, Henkel, et al. (1993)
11. Readiness for Change Quiz, Stewart (1994)
12. Organizational Change Readiness Survey, Jones and Bearley (1985, 1986)
13. Vision Progress Survey, Bollar (1996)
14. TQM Readiness Assessment Methodology, Weeks, Helms and Ettkin (1995)
15. Readiness Mini-Quiz, Belasco (1990) in Elephant Can So Dance, developed by Andrew Grove, Feb., 1987, 9-14.
16. OD Readiness Checklist, Pfeiffer and Jones (1978)
17. Watson Wyatt Change Readiness Assessment Tool
18. Office of Personnel Management scales, Daley (1991)
19. Change Readiness Assessment, The Fanning Institute for Leadership, University of Georgia (2005)
20. Davis (1971) Checklist for Change; Davis & Salasin A-VICTORY (In Bedell, 1985)
21. Organizational Readiness for Evaluation, adapted by Seiden (2000), from Davis and Salasin (1975)
22. Rapid Response Readiness Checklist, Deevy (1995)

CONTENT

23. Semantic differential scales, Giacquinta (1975)
24. Modified receptivity to change inventory, Loup (1994)
25. Decisional balance inventory, Velicer, et al., (1985)

PROCESS

26. Checklist for change, Harvey (1990)
27. Price Waterhouse Change Integration Team (1995)
28. Readiness Scorecard with items adapted from Price Waterhouse Change Integration Team (1995) by Annulis (2004)

Comparison to Other Instruments

Instruments from the research literature and from commercially available sources (see Appendix C and Table 24) were reviewed for comparison with the initial 12 constructs and with the final 8 subscales (Table 23). Items adapted or used from existing scales for the initial 12 constructs are in Appendix B. Other instruments assess: (a) the existence of perceptions or attitudes of employees about an organization's readiness for change, or about individual behaviors or intentions reflective of readiness (see Individual section in Table 24); (b) characteristics of the organization's culture, climate, or management behavior that are conducive to readiness (see Context section in Table 24); (c) decisional reactions to a specific change such as the introduction of an innovation, quality initiatives, school effectiveness, etc. (see Content section in Table 24); (d) steps in the change process in general (see Process section in Table 24). Other instruments informed which constructs were important to assess as part of building a distinct type of organizational culture or climate—a culture ready for change.

The Chase SCOR 8 Survey compares with other instruments by identifying constructs considered in an ideal organizational climate or cultural context. The Survey provides a how-to framework for building change management capacity by: (a) following four common change management steps and (b) incorporating mutually reinforcing principles of readiness across individual, group, process, and organization levels. Several comparable instruments with evidence for reliability

and validity that assess comprehensive and similar dimensions of organizational culture, climate, or context (Burke, et al., 1996; Holt, 2002; Keith, 1986; Seiden, 2000) are further discussed.

The Burke, Coruzzi, and Church (1996) Lay of the Land Survey (150 items) assesses perceptions of the organizational environment (context) without identifying a specific change initiative and distinguishes between two sets of organizational dynamics: the transformational level and the transactional level. The transformational variables include mission and strategy, leadership and organizational culture; the transactional variables include management practices, structure, systems (policies and procedures), work unit climate, motivation, task requirements and individual skills/abilities, individual needs and values. Feedback loops between all the variables and individual and organizational performance highlight the fundamental open systems theory (Katz & Kahn, 1978) underlying the model (1996). There were 12 factors in the diagnostic model. Confirmatory factor analysis and regression analyses were conducted; results indicate that several variables contributed to the equation predicting the dependent variable, overall performance, when other variables were considered, as follows: (a) management practices, (b) work unit climate, (c) organizational culture, and (d) mission and strategy. Burke et al. (1996) identified constructs of organizational culture and other change management considerations that informed the Chase SCOR 8 Survey constructs (see Appendix A).

The Holt (2002) Readiness for Organizational Change instrument (41 items) measures readiness at an individual level since change is carried out by individuals within organizations. The study followed a systematic, comprehensive item development framework (item development, questionnaire administering, item reduction using factor analysis, scale evaluation and replication) with over 900 participants from public and private sector organizations across the different phases of the study. Findings indicated that "the most influential readiness factors" were: (a) discrepancy (i.e. the belief that a change was necessary), (b) efficacy (i.e. the belief that the change could be implemented), (c) organizational valence (i.e. the belief that the change would be organizationally beneficial, (d) management support (i.e. the belief that the organizational leaders were committed to the change), and (e) personal valence (i.e. the belief that the change would be personally beneficial) (Holt et al., 2007, p. 20). Further analyses provided support for the validity of the four readiness for change factors that emerged, exploring discriminant validity, convergent validity, and predictive validity. Evidence of discriminant validity was provided by the readiness for change factors' ability to differentiate between known groups of participants and nonparticipants. Evidence of convergent validity was provided when the readiness for change factors were related to: (a) personality variables (positive affect, negative affect, locus of control, rebelliousness, and general attitudes toward change) in expected ways; and (b) contextual variables (communication climate, trust in top management, perception of top

management's ability, perception of the organization's change climate) in expected ways. Evidence of predictive validity was provided when the readiness for change factors were related to attitudinal work outcomes (job satisfaction, affective commitment, and turnover intentions). Additionally, the readiness for change factors explained a significant amount of variance in the attitudinal outcomes after controlling for biographical characteristics, personality variables, and contextual variables. Holt et al.'s 2007 research on organizational readiness for change instruments and measurement perspectives provided the conceptual framework for this study; Holt's 2002 management support scale provided three items that were adapted for the initial 12 Survey constructs (see Appendix B).

Keith's (1986) Management Self-Improvement Survey (105 items) examines the perceptions and attitudes of employees on dimensions such as: (a) trust in leadership, (b) team work, (c) acceptance of the need for change, (d) how well an organization is perceived to be prepared for that change, and (e) company performance (as measured by customer satisfaction). There was no focus on a particular change initiative, as in the Chase SCOR 8 Survey. Instrument development followed a multi-method approach that included the analysis of company documents (e.g., public relations brochures and employee publications), focus group and interview transcripts, and employee self-report data (via a sorting exercise and open-ended responses). Correlation analyses with readiness for change found that five scales were highly related: climate for innovation, morale, fairness of management, coworker cooperation and

communication. Keith suggests that certain organizational culture dimensions are related to these outcomes, which have important implications for corporate policy and human resource practices such as succession planning, corporate mergers, and large-scale change interventions. Three items from the Keith scales were adapted for the initial 12 Survey constructs (see Appendix B).

Seiden's (2000) Organizational Readiness for Evaluation Survey (68 items) assesses organizational and program culture and attitudes on background and past experience with program evaluation (which is a planned change intervention). Based on the findings from a Literature Review, a preliminary instrument was created and then submitted to an expert panel review and small scale pilot study. Construct validity and internal consistency reliability of the instrument were explored. Factor analysis was conducted to investigate the instrument's scales. The factor analysis produced 8 factors that helped to frame discussions with organizations about their culture. Three factors were related to characteristics of the larger organizational setting of the evaluation: (a) learning orientation and leadership support, (b) collaborative communication, and (c) tolerance of change. Five factors suggested characteristics of programs within the organization: (a) program health, (b) absence of fear, (c) expected yield, (d) ability, and (e) current use of data. Ten items from the Seiden scales were adapted for the initial 12 Survey constructs (see Appendix B).

Comparable instruments further informed the Chase SCOR 8 Survey development and its aim to build a solid readiness foundation as a distinct type

Comparable instruments further informed the Chase SCOR 8 Survey development and its aim to build a solid readiness foundation as a distinct type of organizational culture. Considerations in reviewing comparable instruments were to: (a) identify constructs within the organization's sphere of influence with current employees, (b) identify constructs that were more enduring and less situational (such as strategy or the type of change), and (c) shed light on the need to keep the Chase SCOR 8 Survey user friendly with 44 items so it could be completed in less than 15 minutes.

Distinctiveness from Other Instruments

The Chase SCOR 8 Survey's distinctiveness is in its assessment of a readiness foundation—an ideal state of organizational culture or climate that is ready for change. The Chase SCOR 8 Survey: (a) incorporates principles of readiness across individual, group, process, and organization levels, and (b) follows a how-to framework of four common change management steps for planned change: pre-planning, planning, implementing, and anchoring (see Figure 5). Many scholars discuss models for planned change or change implementation, with terms such as unfreezing, movement, and refreezing (Lewin, 1951); entering and contracting, diagnosing, planning and implementing, evaluating and institutionalizing (Cummings & Worley, 2005), and other variations (Beer & Nohria, 2000; Bennis, et al., 1969; Detert et al., 2000; Leavitt 1965; Kotter & Schlesinger, 1979; Moss Kanter et al., 1992; Powell & Posner, 1980; Waldersee & Grifiths, 2004). Figure 5 depicts the contribution of the

Chase SCOR 8 Survey, incorporating principles of readiness across the steps with the various subscales developed. The subscales are not mutually exclusive to one change management step, but are more integral at certain steps as a how-to framework, to be cascaded and incorporated across all steps.

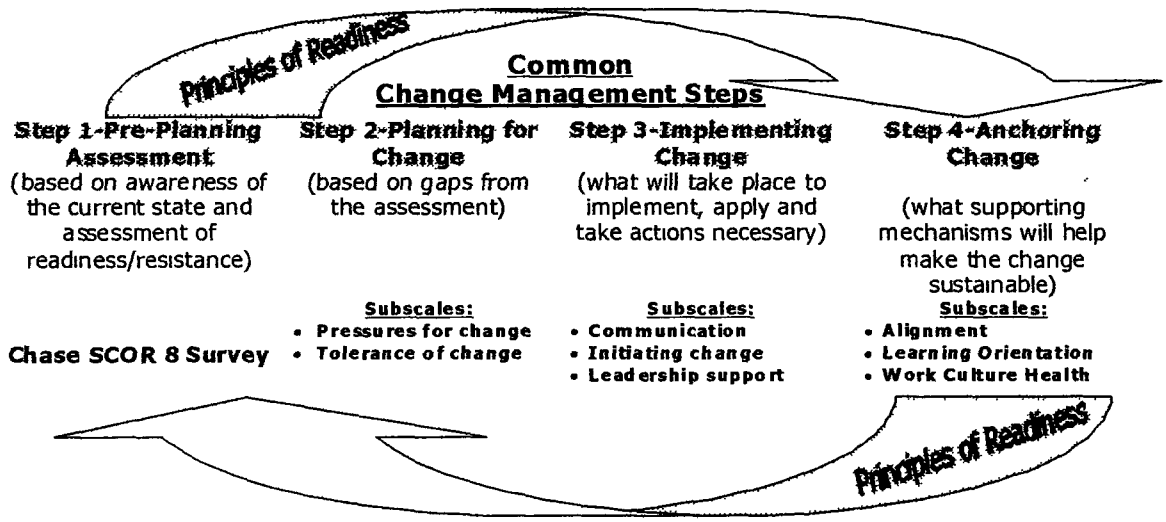

Figure 5. **Chase SCOR 8 Contribution**

The Chase SCOR 8 Survey informs and focuses the organization on practices within the organization's sphere of influence for building a readiness foundation as part of its culture--not on deficits or negativity, or specific change initiatives--but on solutions for building the organization's capacity to learn and implement practices for managing any type of change.

Assessing practices for managing change and organizational readiness is intended to: (a) create a shared focus and collective dialogue about solutions for managing organizational change, (b) identify resistance and readiness gaps, (c) provide those impacted by the change with transition time to make adjustments and focus constructively on empowering solutions, (d) build understanding of

practices for managing change and organizational readiness by identifying gaps in current change management practices.

The Chase SCOR 8 Survey is designed to be: (a) a diagnostic tool for strengthening the readiness foundation, (b) user friendly and of reasonable length, with 44 items; (c) administered with all members of an organization to focus on a shared ideal state of readiness, (d) combined with questions about a specific change initiative or the content of the change, as appropriate; however, the aim is to build a readiness foundation regardless of the change initiative. Research on cooperation with monthly survey administration by the Ohio State University's Center for Survey Research from 1997 to 2002 found that cooperation was lower in months when surveys were longer in (Marton, 2004, cited in Weisberg, 2005).

Future Instrumentation Improvements

The final Chase 8 SCOR subscales or possible predictors capture a comprehensive set of measures that assess practices for managing change and organizational readiness. Refinements may continue with different samples across industries and sectors.

Further instrument refinement and evaluation may include:

1. Reduction in the number of subscales from 8 to 5, as suggested by the multiple regression explanatory value of 5 of the 8 subscales in relation to variables of interest (organizational readiness for change and organizational performance), as conducted in this study;

2. Addition of a few of the original items or new items to the short subscales, such as alignment, leadership support, and learning orientation, to be at least 3 or possibly 5 items to strengthen the reliability findings of these subscales;

3. Addition of items in the work culture health subscale that capture ethical behavior and organizational identification, respectively, based on Nohria, et al.'s research on characteristics of "outperforming" cultures (2003) and Miller et al.'s research on "antecedent factors" influential in shaping employee attitudes about change (1994).

Limitations of the Study

Despite the support for the scales developed, there are several areas of concern. First, the instrument was tested with a diverse group of employer organization types within the same public health sector, undergoing considerable legislatively-mandated and constant political changes. This concern has implications for the generalizability of the results across sectors; however, participants varied in their educational backgrounds as well as their job responsibilities within public health organizations, which offers a level of generalizability yet some concerns given unequal representation across professional groups within the sample. Second, the constructs measured in the subscales can be situationally interpreted in the context of specific change initiatives each participant's employer organization was undergoing. Testing within the same organization with a specific change initiative commonly identified

as a reference point would be informative. Third, further testing of the instrument could be done to replicate the results, explore and confirm the factor structure or number of subscales in light of existing findings.

Recommendations for Future Research

Future research may include:

1. Conducting exploratory or confirmatory factor analysis with a larger sample to adequately test the 8 constructs/presumed factors and their factor structure as further evidence for validity of the measures. Factor analytical techniques with an independent, additional sample would enhance the generalizability of the new measures (Stone, 1978, cited in Hinkin, 1995).

2. Conducting test-retest reliability after a few weeks to a month with the same respondents to test the stability of the measures (Hinkin, 1995) and reduce potential errors caused by factors external to the instrument such as testing situations or respondents (Churchill, 1979).

3. Utilizing the Chase SCOR 8 Survey subscales for analyzing: (a) pre- and post- organization development interventions (Jenlink, 1994; Mohrman & Cummings, 1989), (b) patterns across different organizational culture types, and (c) relationships with individual scales for additional variables of interest.

4. Conducting further analyses to determine the mediation and suppression effects (Baron & Kenny, 1986) of the communication subscale on dependent variables perhaps through path analysis or other linear modeling techniques.

Implications of the Research

This study and the SCOR 8 subscales developed (the Chase SCOR 8 Survey) add to the knowledge of managing change and organizational readiness in several ways. First, it contributes a quantitative survey tool aimed to build a readiness foundation that integrates change management steps with principles of readiness. Second, it demonstrates interactions between practices for managing change and organizational readiness (the 8 subscales) and relationships with: (a) organizational readiness for change ("perceptions of an individual's unique interpretive reality of the organization" (p. 422) using the Eby et al. scale (2000) and (b) perceptions of organizational performance items, using leadership satisfaction with overall performance last year (item 5) and employees' respect of organization's performance (item 17). Contributing a quantitative assessment tool with 8 subscales that can further demonstrate relationships between change management practices, principles of readiness, the organizational context or culture, and organizational performance adds to the practice and research potential for the field of organization development (OD)/human resource development (HRD).

Assessing practices for managing change and organizational readiness using the Chase SCOR 8 Survey can identify gaps compared to an ideal readiness foundation, and holds promise for: (a) acknowledging the natural stage of resistance to change, and utilizing this shared focus with the Chase SCOR 8 Survey to enable transitions; (b) informing and guiding the timing, approach, and

management of change initiatives; (c) strengthening trust in the organization's capacity to change and manage implementation successfully; (d) reducing organizational change implementation failures and their financial and psychological costs, (e) building a distinct type of organizational culture that is responsiveness in adapting to accelerating demands from a increasingly complex external environment.

Conclusion

Managing organizational change to meet accelerating demands requires shared focus, organization-wide competency in managing the process of change, and collective readiness for an efficient, proactive, and timely response. Changes in organization structure, technology, workforce demographics, product and service life cycles, changes due to mergers and acquisitions, and increasing interconnectedness across our global economy are a few that add complexity. Building a readiness foundation, where sustained readiness activities or solutions are part of the day-to-day operation of the business (Redding & Catalanello, 1994) and are mutually reinforcing across the culture, may become a matter of survival amid the accelerating change and increasing complexity facing organizations today and in the future.

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APPENDIXES

APPENDIXES

PHASE I: ITEM IDENTIFICATION AND SCALE DEVELOPMENT

Included:

A. Literature That Informs SCOR Survey Constructs
B. Items Adapted or Used from Comparable Instruments or Scales for Initial SCOR Subscales
C. Instruments Reviewed by Readiness Perspectives

PHASE I: INSTRUMENT DEVELOPMENT AND EXPERT REVIEW

Included:

D. Instrument Draft Revision 1
E. Instructions for Expert Review

PHASE II: ONLINE SURVEY FIELD TEST DATA COLLECTION

Included:

F. Online Survey Field Test Item List (Final Instrumentation)
G. Approval from Colorado State University Human Subjects Research Review
H. Online Survey Participants' Consent Acknowledgment (Cover Letter)
I. Instructions for Online Survey
J. Drawing Instructions
K. Online Survey Invitation Email
L. Invitation to Participate Flyer

APPENDIX A: Literature That Informs SCOR Survey Constructs

Constructs for SCOR Survey	Contributors
Communication	Anderson and Anderson (2001); Lewin (1951); Schein, (1987); Senge (1990): present new information and alternative understandings and explanations others in the organization may have to develop new perspectives Armenakis, Harris and Mossholder (1993): part of three message conveying strategies: persuasive communication (direct communication efforts) and managing internal and external information (making the views of others available); five key message domains (discrepancy, efficacy, appropriateness, principal support, and personal valence) combine to shape an individual's motivations, positive or negative toward the change Armenakis, et al. (1993): communicating the need for change as the discrepancy between desired end state and present state and the ability of those impacted by the change to adapt are essentials to the "message for change" Communications include a message about the *trust in the capacity of employees* to perform in light of the change. Communications include a message about the *benefits* associated with the proposed change to narrow the performance gap. Communications include a message about the *need to change* based on some compelling gap in performance. Communications include a message about the *appropriateness of the change* to fix the gap in performance. Communications include a message about the *strategic purpose* of the change.

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
	Communications include a message about the *positive expectations* for the change. Communications include a message about the *consequences of not changing.* Bandura (1982): create awareness of need to change based on unfavorable personal consequences Burke (1994): interventions directed toward management practices, structure and systems produce transactional change or change in organizational climate Cummings and Worley (2001): creating a felt need for change by sensitizing organizations to pressures for change; revealing discrepancies between current and desired states; conveying credible positive expectations for change Daly (1995) and Mayer et al. (1995): open communications allay fears, educate employees and convey a party's competency in making the change happen Eby (2000): encouraging open communication is part of encouraging and fostering perceptions of support, participation and trust among employees Galpin (1996): communications develop and disseminate a vision of the change; link to the strategic purpose of the change initiative Lewin (1951): systematically feed back information to groups of people who provided input Mayer et al. (1995): open communications allay fears, educate employees and convey a party's competency in making the change happen, which can enger favorable attitudes toward change (cited in Chawla, 2004, p. 487)

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
	Miller et al. (1994): information accessibility and a climate encouraging discussions may significantly impact employee attitudes about change Miller (2000): information accessibility and a climate encouraging discussions may significantly impact employee attitudes about change; Miller and Monge (1985): the accumulation of information is as important a determinant of attitudes about change as recent information Moss Kanter, et al. (1992): articulating a shared vision; ensuring communication, education and training. Nadler and Tushman (1989): create awareness of need to change based on "intellectual pain" Pfeiffer and Jones (1978): interpersonal skills, essentially verbal communication skills Preskill and Torres (1999): communication of information Schein (2004): communication and collaboration across sub-cultures Senge (1990): "mental models" Spector (1989): create awareness of need to change based on dissatisfaction Stewart (1994): communication skills Wanberg & Banas (2000): receipt of information about the change process

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
External Context/Driver for Change	Beckhard and Pritchard (1992): change in relationships with key stakeholders; understanding of external forces that require business decisions for change and organizational consequences that are required for change Bennis (1969): adaptability: ability to solve problems and to react with flexibility to changing environmental demands Burke (1994): people's collective assessment of an organization, based on managerial practices and organizational systems and procedures; collective assessment of the organization based on enduring often unconscious values, norms and assumptions Coch and French (1948): when employees self-discovered the seriousness of the external threat, they then recognized the necessity of the changes Galpin (1996): establish the need to change Lewin (1951): new field of forces must be established to support new behavior Moravec (1995): benchmarking Pettigrew (1987): emphasizing the importance of changes in the external environment justifies the need for organizational change and the legitimacy of it in relation to the organization's performance Pfeiffer and Jones (1978): growth rate crisis; macroeconomic factors Porras (1987): diagnosis of the organization's problems and barriers to effectiveness is performed; task force from all parts of the organization reviews and agrees on what they mean Radin and Coffee (1993): external motivation for change Schein (1987): changing through cognitive restructuring: scanning environment for new relevant information

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
External Context/Driver for Change (continued)	Schein (2004): cultural assumptions reflect deeper issues about the nature of truth, time, space, human nature and human relationships; external adaptation, internal integration Stewart (1994): competitor, benchmarking, customer focus
Initiating Change	Beckhard and Harris (1987): examine relationship between organizational capabilities and readiness for change Beckhard and Pritchard (1992): defining the tasks to be done; creating management structures dedicated to accomplishing these tasks; developing strategies for obtaining necessary commitment from key players; designing a strategy and mechanisms for the communication of the change; assigning dedicated resources, experts and consultants to assist in managing the change. Bennis, et al., (1969): Procedures in instituting change and overcoming resistance, include: (a) if participants have joined in diagnostic efforts leading them to agree on what the basic problem is and to feel its importance; (b) if the project is adopted by consensual group decision; (c) if proponents are able to empathize with opponents; to recognize value objections; to take steps to relieve unnecessary fears; (d) if it is recognized that innovations are likely to be misunderstood and misinterpreted, and if provision is made for feedback of perceptions of the project and for further clarification as needed; (e) if participants experience acceptance, support, trust and confidence in their relations with one another; (f) if the project is kept open to revision and reconsideration if experience indicates that changes would be desirable

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Initiating Change (continued)	Lewin (1951): jointly developing action plans, using the consultant knowledge and skills and the insider perspective of members; generating psychological ownership of an action plan Mink et al. (1994): a constancy of purpose Turner and Crawford (1998): the capabilities required to implement change are different than those required for current business performance Vollmann (1996): strategic intent, resources, processes
Leadership Support	Beckhard & Pritchard (1992): securing organization-wide commitment; behavior and commitment in top management; vision-driven change Burke (1994): interventions directed toward leadership, mission, strategy and culture produce transformational change Galpin (1996): Reinforce desired management behaviors; provide training to management that focuses on the new behaviors; publicly recognize and reward managers who change to the desired behaviors; penalize managers who do not change behaviors Mink (1994): effective leadership of change Moravec (1995): leadership sponsorship Moss Kanter, et al. (1992): coalition building, assembling backers and supporters; defining the guidance structure and process Pfeiffer & Jones (1978): flexibility at the top

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Leadership Support (continued)	Pheysey (1993): Role culture power base is legitimacy (leaders appointed); Power culture power base is force or rewards (leaders use fear); Achievement culture power base is expertise (leaders use recognition); Support culture power base is informal status (leaders have charisma and support esteem in others) Preskill & Torres (1999): leadership Schein (2004): creates and embeds culture; focus on leadership and how culture appears from the leader's perspective Senge (1990): "building shared vision" provides the focus and energy for learning Stewart (1994): sponsorship, leadership Vroom (1964): expectancy that leaders will navigate the change and they will succeed
Tolerance of Change	Burke (1994): identifies variables involved in creating "transaction" and "transformational" change Fiol & Lyles (1985): flexible organizational strategy; environment not too stable or too dynamic Lewin (1951): equilibrium point is the resultant in a field of forces; force field analysis can move the equilibrium point in one direction or another; change is a three-stage process McNabb and Sepic (1995): quantitative instrument: organizational culture, operating climate, organization policies, performance outcomes, and organizational readiness for change Pfeiffer and Jones (1978): bureaucratic, heavily unionized, ritualistic organizations are likely to be closed, nontrusting systems that do not invest heavily in efficiency and effectiveness

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Tolerance of Change (continued)	Pheysey (1993): methods of making change: role culture: by constitutional authority; power culture: by hierarchical authority; achievement culture: by lateral authority or experts; support culture: by ideas exchanged by those with mutual authority Preskill & Torres (1999): systems and structures that support learning Schein (1987): unfreezing: creating readiness to change Schein (2004): internal flexibility and creativity to make changes which are demanded by the information obtained; integration and commitment to multiple goals; willingness to change when necessary
Alignment	Beckhard and Pritchard (1992): align human resource policies with the new culture; an information system and financial management and controls aligned to the new conditions Beer (1980): plan reinforcements (incentive systems, performance appraisal systems and measurements, and control systems) social modeling (leadership by example) social interactions (communication about change, coaching, performance appraisal interviews, the development of group norms), and selection and training interventions (replacement of key people and educational programs) to support new behaviors Galpin (1996): The "cultural screen" identifies all the elements of the organizational culture that can be leveraged to successfully implement and sustain change. Mink (1994): alignment and management of subsystems Moss Kanter, et al. (1992): undertaking policy and systems review: "changes in one major element (of the organization) may necessitate compensating or complementing changes in another."

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Alignment (continued)	Schein (1985, 1990): leadership modeling of behavior is fundamental to group members identifying with and internalizing the leader's values and basic assumptions; two mechanisms are proposed to embed and solidify culture in a new organization: primary embedding mechanisms (including what leaders attend to, measure, control, how they react, role modeling, etc.); secondary reinforcement mechanisms (including mechanisms that help organization members recognize important cultural values such as policies, etc.)
Collaborative Work Culture	McNabb and Sepic (1995): members' behaviors, values, actions and policies; structure, technology, employee role clarify and social interaction and support Mink (1994): focus on achievement and goals through collaboration and working together than through application of authority; "a philosophy of cooperation and teamwork" Pareek (1988): mutuality and teamwork, temporary systems (e.g. task forces) Pheysey (1993): Types of control: Role culture: hierarchical control via impersonal regulations (change by constitutional authority); Power culture: hierarchical control via direction and supervision (change by hierarchical authority); Achievement culture: self-control (personal accountability for delegated achievements) (change by experts with lateral authority); Support culture: collaborative control with mutual accountability (change by mutual authority and ideas exchange)

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Collaborative Work Culture (continued)	Porras (1987): task force from all parts of the organization reviews and agrees on what they mean Preskill and Torres (1999): culture (i.e. collaborative problem solving, participatory decision making); teams Schein (2004): communication and collaboration across subcultures; internal climate of support and freedom from threat Senge (1990): team learning Stewart (1994): motivation, direction, organizational context, processes/functions, rewards, organizational structure, organizational hierarchy, morale, decision making
Current Use of Data	Beckhard and Harris (1987): an assessment of organizational capabilities assists organizations in focusing on specific areas to create the critical energy for change to occur Beer (1980): include diagnosis of the organization and intervention in the structures of the organization Beer, 1980; Gilley & Maycunich, 2000; McNabb & Sepic, 1995; Moss Kanter, Stein & Jick, 1992: An objective assessment of the current state is commonly conducted by organization development practitioners and researchers in the support of its importance for organizational change efforts Moss Kanter, et al. (1992): ensuring standards, measures and feedback mechanisms to indicate success. Results measures and process measures Peach, Jimmieson and White (2005): reinforce the importance of pre-implementation assessment since readiness for change depends on a variety of factors Schein (1987): "cognitive restructuring" as a respond to new relevant information from scanning the environment. Vollmann (1996): outputs

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Learning Orientation	Beckhard and Pritchard (1992): conscious effort to move to a learning code and culture; feedback is requisite to the learning process. Fiol and Lyles (1985): culture supports learning, innovativeness and new insights Galpin (1996): organizational transformation, a.k.a. organization-wide continuous learning Lewin (1951): action research: learning about dynamics of organizational change and doing or implementing change effort Lewin (1951): discussing what information means to members and its implications for the organization to be certain the diagnosis is accurate and to generate psychological ownership of the need for improvement actions Mink et al. (1994): desire for continuous improvement and learning Mohrman and Cummings (1989): approaching change as a learning experience makes for the best organizational change programs Moravec (1995): skills of how to change; flexibility: a learning mindset Pareek (1988): competency building (via training programs, sharing of information/ideas/experiences) Pfeiffer and Jones (1978): management development Peach, Jimmieson and White (2005): reinforce the importance of pre-implementation assessment since readiness for change depends on a variety of factors

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Learning Orientation (continued)	Schein (2004): organizational learning, development and planned change cannot be understood without considering culture Senge (1990): change is learning and learning is change. Learning enhances our capacity to create Stewart (1994): innovation and structural flexibility
Treatment of Customers/ Stakeholders	Mink et al. (1994): interchange activities, data and energy with those upon whom they depend (customers and suppliers)
Treatment of Employees	Armenakis et al. (1993): part of three message conveying strategies: active participation (involving people in activities designed to have them learn through self-discovery) Chawla (2004): employee involvement strategies are considered critical for the success of change initiatives across the change management literature Cobb et al., (1995): noted that issues of justice and fairness arise during change efforts Rizzo, House & Lirtzman (1970): employees' role ambiguity may affect their attitude toward organizational change Wanberg & Banas (2000): allowing workers to have input regarding a proposed change

APPENDIX A: Literature That Informs SCOR Survey Constructs (continued)

Constructs for SCOR Survey	Contributors
Work Unit Health	Armenakis, et al. (1993): interpersonal and social dynamics within one's work group may impact organizational readiness for change Armenakis, et al., 1993; McManus, et al., 1995: employees must trust management and co-workers for change efforts to be successful Fiorelli and Margolis (1993): conditions of trust reduce resistance and enhance receptivity and commitment to change Porras (1987): modify organizing arrangements, social factors, technology, and physical settings, which in turn causes changes in individuals' on-the-job behaviors Riggs and Knight (1994); Sheppard (1993): concerns about social loafing may be lessened if the work group environment exhibits reciprocity, trust, and confidence in the skills and abilities of one's peers Schein (1985, 1990): leadership modeling of behavior is fundamental to group members' identifying with and internalizing the leader's values and basic assumptions Wanberg & Banas (2000): social support

APPENDIX B

Items Adapted or Used from Comparable Instruments or Scales for Initial SCOR Subscales

Items selected for inclusion (used or adapted) were made for two reasons: (a) the original scale had certain items of interest for assessing dimensions of the constructs, and (b) the original scale reported coefficient alphas as measures of internal consistency and reliability. Items by subscale follow.

Communication

Collaborative Communication (Seiden, 2000) 10-item scale, 2 items adapted for new scale.

External Context/Driver for Change

Learning Orientation and Leadership Support (Seiden, 2000) 23-item scale, 1 item adapted for new scale.

Initiating Change

A-VICTORY (Davis 1971, as cited in Bedell, 1985) 42-item scale, 2 items adapted for new scale.

Leadership Support

Trust in Management (LaRocco, Gunderson, Dean, James, Jones & Sells, 1975, cited in Weber & Weber, 2001) 4-item scale, 2 items included in new scale.

Management Support (Holt 2002, 2007) 10-item scale, 3 items adapted for new scale.

Tolerance of Change

Self-efficacy for Change (Schwoerer & Rosen, 1992, cited in Rafferty & Simons)

Tolerance of Change (Seiden, 5-item scale, 1 item adapted for new scale)

A-VICTORY (Davis 1971 as cited in Bedell, 1985) 42-item scale, 1 item adapted for new scale.

Change Orientation (Daley 1991) based on Office of Personnel Management scale (1980) 3-item scale, 1 item adapted for new scale;

Organizational Trust (Daley 1991) based on Office of Personnel Management scale (1980) 2-item scale, 1 item adapted for new scale.

APPENDIX B
(continued)

Tolerance of Change
(continued)

Organizational Structure and Climate--Encouragement of Risk Taking (Song & Parry 1993, cited in Bruner II & Hensel, 1996), 3-item scale, 1 item adapted for new scale.

Organizational Frustration (Spector, 1975, cited in Cook, Hepworth, Wall & Warr, 1981), 29-item scale, 3 items used for new scale.

Alignment

Collaborative Work Culture

Learning Orientation and Leadership Support (Seiden, 2000) 23-item scale, 1 item adapted for new scale.

Intergroup Relations (Daley 1991) based on OPM scale (1980) 4-item scale, 1 item adapted for new scale.

Current Use of Data

Current Use of Data (Seiden, 2000) 6-item scale, 1 item adapted for new scale.

Learning Orientation

Learning Orientation and Leadership Support (Seiden, 2000) 23-item scale, 2 items adapted for new scale.

Treatment of Customers/Stakeholders

Treatment of Employees

Learning Orientation and Leadership Support (Seiden, 2000) 23-item scale, 1 item adapted for new scale.

Work Unit Health

Trust in Management (LaRocco, Gunderson, Dean, James, Jones & Sells, 1975, cited in Weber & Weber, 2001) 4-item scale, 2 items included in new scale.

Customer Orientation--Organizational Socialization (Kelley, 1992, cited in Bruner II & Hensel, 1996) 20-item scale, 1 item used in new scale.

Learning Orientation and Leadership Support (Seiden, 2000) 23-item scale, 1 item adapted for new scale.

Climate for Innovation (Keith, 1986) 5-item scale, 1 item adapted for new scale.

Fairness of Management (Keith, 1986) 5-item scale, 1 item adapted for new scale.

Co-Worker Cooperation (Keith, 1986) 5-item scale, 1 item adapted for new scale.

Co-Worker Cooperation (Keith, 1986) 5-item scale, 1 item adapted for new scale.

APPENDIX C

Instruments Reviewed by Readiness Perspectives

Instruments from the research literature and from commercially-available sources were included for comparison with the initial 12 SCOR constructs using the same conceptual framework by readiness perspectives (individual, context, content, process). The comparisons were bound by the SCOR 8 Survey's primary aim to build a readiness foundation in the culture of an organization, incorporating principles of readiness and constructs considered to be *under the influence of the organization.* Many more instruments were reviewed from the context perspective, since building a readiness foundation is fundamentally about organization culture change. Individual characteristics and reactions to change based on personality, personal habits and dispositions were not considered to be within the influence of an organization in terms of its socialization processes or prevailing group norms; additionally, assessing for individual characteristics using psychological assessments of self-esteem, life experiences contributing to capacity to cope with change, etc. could also possibly raise liability concerns for organizations.

SCOR Survey subscale comparisons to selected instruments by item and/or scale follow. Boxes left blank indicate that comparable instruments did not include similar constructs as in the Chase SCOR 8 subscales. References to all comparable scales are at the end of this Appendix.

Initial 12 SCOR constructs (for the instruments, expert review, and field test) included:

1. Communication
2. External Context/Driver for Change
3. Initiating Change
4. Leadership Support
5. Tolerance of Change
6. Alignment
7. Collaborative Work Culture
8. Current Use of Data
9. Learning Orientation
10. Treatment of Customers/Stakeholders
11. Treatment of Employees
12. Work Unit Health

Comparison to Existing Instruments by Readiness Measurement Perspective INDIVIDUAL			
	Commitment to Organizational Change, Herscovitch & Meyer (2002)	Readiness for Change, Holt (2002), Holt et al., (2007)	Stages of change in psychotherapy scale, McConnaughy, Prochaska & Velicer (1983); Prochaska & DiClemente (1983)
1. Communication			
2. External Context/Driver for Change		Need for change Organizationally beneficial	
3. Initiating Change			
4. Leadership Support		Management support	
5. Tolerance of Change			
6. Alignment			
7. Collaborative Work culture			
8. Current Use of Data			
9. Learning Orientation			
10. Treatment of Customers/ Stakeholders			
11. Treatment of employees			
12. Work Unit Health			
13. Other:	Affective commitment (desire to remain) CONTENT OF THE CHANGE Continuance commitment (perceived cost of leaving) Normative commitment (perceived obligation to remain)	Personal confidence/change self-efficacy Personally beneficial Appropriateness (of the change, type/content of change)	Pre-contemplation Contemplation Decision-Making Action Maintenance

Comparison to Existing Instruments by Readiness Measurement Perspective INDIVIDUAL (continued)			
	Organizational Readiness for Change, Eby et al. (2002) scale	(Individual) Organizational Readiness for Change Cunningham et al. (2002)	Openness toward change Miller, Johnson & Grau (1994)
1. Communication			
2. External Context/Driver for Change			
3. Initiating Change			
4. Leadership Support			
5. Tolerance of Change			
6. Alignment			
7. Collaborative Work culture			
8. Current Use of Data			
9. Learning Orientation			
10. Treatment of Customers/ Stakeholders			
11. Treatment of employees			
12. Work Unit Health			
13. Other:	• When changes are made in this organization, employees usually lose out in the end. * • It is really not possible to change things around here.* • Employees here don't take action until a mistake has occurred.* • Employees here act as agents of change. • Employees here will not change or alter a process until a problem develops. * • Employees here believe that they should do their jobs the same way that they always have done them. * • Employees here are resistant to change. * • Employees here will only learn new ways if they are forced to. * • Employees here believe "If it ain't broke, don't fix it."*	Based on Prochaska & DiClemente's work, adapted for organiza-tions, w/items as follows: • The program or area in which I work functions well and does not have any aspects which need changing. • There's nothing that I really need to change about the way I do my job to be more efficient. • I've been thinking that I might want to help change something about the program or area in which I work. • I plan to be involved in changing the program or area in which I work. • I am working hard to help improve aspects of the program or area in which I work. • I am trying to make sure I keep changes/improvements my program/area has made.	• "Open" to the changes to work role • Resistant to changes • Looking forward to changes • Reluctant to consider changing the way I do work • Proposed changes will be for the better • Proposed changes will be for the worse • Proposed changes will have a negative effect on how I perform my role

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT			
	Management Self-Improvement Survey (MSIS), Keith (1986)	Lay of the Land Survey, Burke, et al. (1996)	Empowerment-readiness survey, Henkel, et al. (1993)
1. Communication	Communications		Communication (9 items)
2. External Context/Driver for Change		External environment Mission and strategy	Information (8 items)
3. Initiating Change	Readiness for change (expectancy of success, likelihood of doing, management support)		
4. Leadership Support	Readiness for change (expectancy of success, likelihood of doing, management support)	Leadership Management practices	
5. Tolerance of Change	Climate for innovation Readiness for change (expectancy of success, likelihood of doing, management support)		Ambiguity (4 items)
6. Alignment	Planning and organization		
7. Collaborative Work culture	Delegation of authority	Organizational culture—attempting new approaches to doing their work Systems	Value of people (13 items)
8. Current Use of Data	Change in productivity Operational efficiency		Information (8 items)
9. Learning Orientation	Training effectiveness Performance feedback		Learning (8 items)
10. Treatment of Customers/ Stakeholders			

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Management Self-Improvement Survey (MSIS), Keith (1986)	Lay of the Land Survey, Burke, et al. (1996)	Empowerment-readiness survey, Henkel, et al. (1993)
11. Treatment of employees	Performance standards Performance management outcomes Equal employment opportunity programs Workload balance Opportunity for promotions		
12. Work Unit Health	Co-worker cooperation Work definition Fairness of management Work satisfaction Morale	Structure—to help people cooperate to get the job done Work unit climate	
13. Other:	Employee health Physical working conditions and equipment	Job skills match Motivation Individual needs, values Performance	Concepts about power (8 items)

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Readiness for Change Quiz, Stewart (1994)	Organizational Change Readiness Survey, Jones and Bearley (1985, 1986)	Vision Progress Survey, Bollar (1996), (items to measure change readiness)
1. Communication	Communication		Open Communication
2. External Context/Driver for Change	Organizational context Competitor benchmarking		Organization is becoming more competitive
3. Initiating Change			
4. Leadership Support	Sponsorship Leadership	Structural readiness	
5. Tolerance of Change	Motivation Direction Organizational structure Organizational hierarchy Prior experience Morale Innovation	Climatic readiness Systemic readiness People readiness	Challenge the way things done in the past People are excited about making improvements Encouraged to be innovative Employees are afraid to voice an opinion management doesn't want to hear Decisions are made that may hurt the org. in the long run
6. Alignment		Structural readiness	
7. Collaborative Work culture	Decision-making	Structural readiness	
8. Current Use of Data	Measurements	Technological readiness	
9. Learning Orientation		Climatic readiness	Continuous learning Great value placed on learning and development
10. Treatment of Customers/ Stakeholders	Customer focus	People readiness	Innovation, risk taking, customer focus
11. Treatment of employees	Rewards	People readiness	

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Readiness for Change Quiz, Stewart (1994)	Organizational Change Readiness Survey, Jones and Bearley (1985, 1986)	Vision Progress Survey, Bollar (1996), (items to measure change readiness)
12. Work Unit Health		Structural readiness People readiness	Mutual trust Priority for member health Flexibility to do job Immediate supervisor involves me Job is free of unnecessary policies and procedures Immediate supervisor gives guidance and support Work group has made changes in past year to be more competitive
13. Other:		Five dimensions of readiness: Structural: the ability to keep a clear vision and to reorganize quickly and easily in response to external change and opportunity Technological: the ability to remain current and innovative in the exploitation of material resources and know-how. People: having managers and workers who can work productively together within an environment that is ambiguous and in flux. Systemic: having systems in place that scan and provide information necessary to monitor effects of change. Climatic: having an internal ambience that supports people and planned-change efforts.	

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	TQM Readiness Assessment Methodology, Weeks, Helms and Ettkin (1995)	Readiness Mini-Quiz Belasco (1990) Elephant Can So Dance, Andrew Grove, Feb., 1987, 9-14.	OD Readiness Checklist, Pfeiffer & Jones (1978)
1. Communication		Take the call Delegate to their manager Ask employee to contact their manager	
2. External Context/Driver for Change	Common vision/benchmarking		Macroeconomics
3. Initiating Change			
4. Leadership Support			Flexibility at the top
5. Tolerance of Change	Acceptance of responsibility/autonomy Desire to change Ability to adapt to change Innovativeness		Crisis, receptive to intervention OD History Culture Structural flexibility Internal change agents
6. Alignment			
7. Collaborative Work culture	Degree to which employees feel they have influence Teamwork	Managers address steps to deal with problems Consultants are hired to address steps Multidisciplinary task force is charged to address steps	
8. Current Use of Data			
9. Learning Orientation			
10. Treatment of Customers/ Stakeholders			
11. Treatment of employees			
12. Work Unit Health			Interpersonal skills
13. Other:			Time commitment Money Access to people Labor contract limitations Structural flexibility

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Watson Wyatt Change Readiness Assessment Tool (creating the pull, supporting the people, managing the process)	Office of Personnel Management scales, Daley (1991)	Change Readiness Assessment, The Fanning Institute for Leadership, University of Georgia (2005)
1. Communication			
2. External Context/Driver for Change	Building the case for change		
3. Initiating Change			
4. Leadership Support	Leadership & sponsorship Vision & strategy		Direction Resources
5. Tolerance of Change		Change orientation Organizational trust	History of change Culture Resilience Impact on status quo Skill at managing change
6. Alignment	Cultural alignment Organizational & people Practices alignment Program & project management		
7. Collaborative Work culture		Group effectiveness Intergroup relations	
8. Current Use of Data	Performance measurement		Assessment and evaluation
9. Learning Orientation	Employee training & development Debrief & analysis (lessons learned)		
10. Treatment of Customers/ Stakeholders			
11. Treatment of employees	Governance & conflict management		Cooperation and trust Rewards Respect, control and saving face
12. Work Unit Health		Performance feedback Index of quality Performance appraisal Work facilitation/goal setting Delegation	

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Watson Wyatt Change Readiness Assessment Tool (creating the pull, supporting the people, managing the process)	Office of Personnel Management scales, Daley (1991)	Change Readiness Assessment, The Fanning Institute for Leadership, University of Georgia (2005)
13. Other:	Stakeholder identification & assessment Personal transition (helping individuals make personal changes)	Challenge Freedom	

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Davis (1971) Checklist for Change; Davis & Salasin A-VICTORY (In Bedell, 1985)	Organizational Readiness for Evaluation, adapted by Seiden (2000), from Davis & Salasin (1975)	RapidResponse Readiness Checklist, Deevy (1995)
1. Communication			
2. External Context/Driver for Change	Circumstances—describes characteristics of the org. environment that facilitate or prevent adoption Timing		
3. Initiating Change			
4. Leadership Support			Business is positioned for success Management has a clear sense of direction
5. Tolerance of Change		Resistance to change Feared negative consequences Expected yield	
6. Alignment			
7. Collaborative Work culture	Values—congruence between values of the org. and those inherent in the innovation or change	Collaborative communication	Employees have a stake in the outcome Reinforces teamwork and multi-skill development Top management provides visionary leadership More employee involvement
8. Current Use of Data		Current use of data	Employees have access to the scoreboard
9. Learning Orientation	Ability—refers to the resources available within the organization	Learning orientation & leadership support	
10. Treatment of Customers/ Stakeholders			Work activity flows in the direction of the customer
11. Treatment of employees		Ability	
12. Work Unit Health		Healthy program	

Comparison to Existing Instruments by Readiness Measurement Perspective CONTEXT (continued)			
	Davis (1971) Checklist for Change; Davis & Salasin A-VICTORY (In Bedell, 1985)	Organizational Readiness for Evaluation, adapted by Seiden (2000), from Davis & Salasin (1975)	RapidResponse Readiness Checklist, Deevy (1995)
13. Other:	Idea (content of the change)—information needed Obligation—whether org. Feels a strong need for action Resistance—evaluates structural and human factors that inhibit or impede change w/in an org. Yield—perception of expected benefits Timing		

Comparison to Existing Instruments by Readiness Measurement Perspective CONTENT			
	Semantic differential scales, Giacquinta (1975)	Modified receptivity to change inventory, Loup (1994)	Decisional balance inventory, Velicer, et al., (1985)
1. Communication			
2. External Context/Driver for Change			
3. Initiating Change			
4. Leadership Support			
5. Tolerance of Change	My performance after introduction of innovation Organizational performance after introduction of innovation		
6. Alignment			
7. Collaborative Work culture			
8. Current Use of Data			
9. Learning Orientation			
10. Treatment of Customers/ Stakeholders			
11. Treatment of employees	Job after introduction of innovation		
12. Work Unit Health			
13. Other:	Adjective pairs include: Bad-good Delicate-rugged Tense-relaxed Wise-foolish Necessary-unnecessary Ineffective-effective Strong-weak Unsuccessful-successful Dull-sharp Slow-quick Heavy-light Soft-hard Important-unimportant Passive-active Negative-positive Steps in the change process: Analysis, Planning, Imple-mentation & Eval.	In relation to each proposed innovation or change, respondents answered: 1-I definitely would not support the suggestion. I am very much opposed to the idea and I am against such a change. 2-I would not likely support the suggestion. The suggestion is not a good idea. 3-It makes no difference one way or another. The idea is of such insignificance that I would not question it. 4-I would probably support the suggestion. However, I would have to know more of the reasons behind the idea. 5-I would support the suggestion. It is obviously a good idea and should be done. School overall effectiveness	

Comparison to Existing Instruments by Readiness Measurement Perspective PROCESS			
	Checklist for change, Harvey (1990)	Price Waterhouse Change Integration Team (1995)	Readiness Scorecard with items adapted from Price Waterhouse Change Integration Team (1995), Annulis (2004)
1. Communication	Description Need	Build a powerful case for change Communicate consistently	
2. External Context/Driver for Change			Improvement opportunities are identified in the organization. The company looks for benchmark targets outside of the organization (and beyond the geospatial industry).
3. Initiating Change	Analysis Potential actors Planning Implementation and actual changes Change strategy Participation Excitement Scope Evaluation Advocates Time frame Action plans Risk analysis	Plan Focus on strategic context Know your stakeholders	The change program is clearly defined. There are adequate resources for change. Changes have apparent rational for the change actions. Benefits of the change initiative are well defined. Adequate resources are available for change processes.
4. Leadership Support	Advocates	Summon a strong mandate Set scope intelligently; Think big	There is adequate sponsorship for change.
5. Tolerance of Change	Monitoring Change environment	Use all of the levers of change	
6. Alignment		Focus on strategic context Plan	
7. Collaborative Work culture	Participation Culture	Leverage diversity	Participation Culture
8. Current Use of Data	Risk analysis	Confront reality Reshape your measures	Risk analysis
9. Learning Orientation	Unfreezing		Unfreezing

Comparison to Existing Instruments by Readiness Measurement Perspective PROCESS (continued)			
	Checklist for change, Harvey (1990)	Price Waterhouse Change Integration Team (1995)	Readiness Scorecard with items adapted from Price Waterhouse Change Integration Team (1995), Annulis (2004)
10. Treatment of Customers/ Stakeholders	Payoff Resistance	Customer drives change	Payoff Resistance
11. Treatment of employees	Payoff, Resistance		Payoff, Resistance
12. Work Unit Health			
13. Other:			

APPENDIX C
(continued)

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APPENDIX D: Instrument Draft Revision 1

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for further information or usage permission

APPENDIX E

Instructions for Expert Review

ACTIVITY: Small groups

PURPOSE: Sort SCOR subscale items by employee answerability
PROCESS:

1. Expert reviewers organized into small groups
2. Each group received (a) a stack of items from the SCOR Survey, each item printed on separate sheets and (b) an overview sheet of all the items for the constructs they are asked to review
3. Small groups discussed and sorted the stack of items first by:
   Most likely/least likely for an employee with one year of experience to answer
4. Small groups prepared presentations to the larger group and mini focus group based on their final sorted stack of items on the flip charts for any further discussion.

ACTIVITY: Large group discussion

PURPOSE: Presented findings from small groups on sorted SCOR Survey items based on most likely/least likely to answer and solicited input from the larger group on answerability, revisions, other suggested items important to organizational readiness for change
PROCESS:

5. Small groups designated a facilitator(s) who:
   Facilitated a mini focus group
   Requested feedback from their small group peers using the facilitator feedback form if requested
   Small groups designated a note taker to document on the flip charts.
6. Facilitator reviewed the presentation on the flip charts (and handout for each group's items) and solicited input from the large groups referencing the flipchart with items posted by asking:
   Could you answer these items as an employee in an organization with a year's experience there?
   Are there any other thoughts or suggested revisions for these items?
   Are other items important for organizational readiness for change? If so, why?
   Note taker recorded responses on separate flip charts

ACTIVITY: Individual review of small group and large group findings on flipcharts

PURPOSE: All expert reviewers reviewed the final items posted on the flipcharts and added other notes or suggestions for clarity with post-its
PROCESS:

7. Individuals walked around to review flipcharts and add notes or suggestions

APPENDIX F: Online Survey Field Test Item List

Appendix G: Approval from Colorado State University

Human Subjects Research Review

Colorado State University

Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX (970) 491-2293

COPY

DATE: September 5, 2008

TO: Gene Gloeckner, Edcuation, 1588

FROM: Janell Barker, IRB Administrator
Research Integrity & Compliance Review Office

TITLE: Instrument Development: Assessing Organizational Readiness for Change

IRB ID: 012-08H **Review Date:** September 5, 2008

The Institutional Review Board (IRB) Administrator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)2. The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the IRB application**, including obtaining and documenting (signed) informed consent if stated in your application or if required by the IRB.
- **Any modification of this research should be submitted to the IRB through an email to the IRB Administrator, prior to implementing any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.
- **Please notify the IRB if any problems or complaints of the research occur.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a similar study in the future.

APPENDIX H: Online survey participants' consent acknowledgment

"Your participation in this survey is voluntary. Your individual responses will be anonymous. Your employment is in no way tied to the survey results. There are no known risks or direct benefits in participating in this study, but we hope to improve understanding of organizational readiness for change to reduce the financial and psychological costs associated with failed change initiatives. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown risks."

I acknowledge the above and consent with my completion of the survey.

APPENDIX I: Instructions for online survey

Thanks in advance for your participation in this online survey, which should take no more than 20 minutes of your time.

INTRODUCTION:
Your time in completing this survey will assist researchers in developing a valid, reliable measure of organizational readiness for change. This survey will be designed in its final form to help organizations and professionals leading change assess readiness before investing the time and resources in change initiatives.

Readiness for change has implications for all types of organizations, including public health organizations, stakeholders, community populations and individual health behavior change. Change readiness encompasses 1) planning, 2) implementing, and 3) anchoring change to ensure sustainability across different levels targeted by the change initiative(s).

A "change initiative" is any type of change, which can be system or organization-wide, a change in a work process, a change in strategy or direction, a new annual work plan for a program, etc.

INSTRUCTIONS:
Please complete only one survey assessing the same and only one employer organization. Use this employer organization as the point of reference in responding to each question.

Questions will specify the response options, however, most are structured as follows:

5-Strongly Agree
4-Agree
3-Neither Agree nor Disagree
2-Disagree
1-Strongly Disagree
0-Not Enough Info. to Assess

Please carefully SELECT ONLY ONE RESPONSE from the drop-down menu.

CONSENT:
Your participation in this survey is voluntary. Your individual responses will be anonymous. Your employment is in no way tied to the survey results. There are no known risks or direct benefits in participating in this study, but we hope to improve understanding of organizational readiness for change to reduce the financial and psychological costs associated with failed change initiatives.

APPENDIX I: Instructions for online survey (continued)

It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown risks.

I acknowledge the above and consent with my completion and submission of the survey.

GIFT CARD DRAWING:
After completion of the survey, you are eligible to register to participate in a drawing for one of four $50 VISA gift cards. The information submitted to register for the drawing will only be used for the purposes of the drawing and destroyed afterward. The drawing will be conducted by random number selection after the close of the online survey. Winners will be notified directly.

NOTICE AT THE END OF THE SURVEY:

You're done! Thanks SO MUCH for taking the time to help! Survey results by type of employer organization will be made available online at www.surveyreadiness.info

You are now eligible to participate in a drawing for one of four $50 VISA Gift Cards. Go to the separate survey link and spend 30 seconds to answer one question to register. Click Here to take survey

IN THE SEPARATE SURVEY:

Your contact information will be used to send the VISA Gift Card to you. This contact information does not link to your responses on the SCOR Survey and will be destroyed after the drawing.

APPENDIX J: Drawing instructions

Participants in the online survey choose to provide their contact information to participate in the drawing for a $50 VISA gift card. This information would be collected in a separate survey link at the survey participants' discretion.

Random number generator in Excel would be used to randomly select the four winners from the list in the separate survey link.

Winners will be notified directly with the gift card to be mailed to them.

APPENDIX K: Online Survey Invitation Email

Your insights as a public health professional are sought to assess your employer organization's readiness for change. Your participation would involve 20 minutes of your time.

If you could assess readiness for change for your projects before investing the time, resources and your precious energy and motivation, wouldn't your work be more gratifying? Your time in completing this survey will assist researchers in developing a valid, reliable measure of organizational readiness for change, as part of a Ph.D. dissertation research project. This survey will be designed in its final form to help organizations and professionals leading change increase the likelihood of sustainable change.

Readiness for change has implications for all organizations, public health organizations, stakeholders, community populations and individual health behavior change. Organizational readiness for change encompasses 1) planning, 2) implementing and 3) anchoring change to build readiness and sustainability.

Should 15 or more professionals identify with the same type of employer organization, a summary report with recommendations to strengthen readiness for change will be available on the www.surveyreadiness.info website. You are also eligible to participate in a drawing for one of four $50 VISA gift cards.

Thank you in advance of your participation.

APPENDIX L: INVITATION TO PARTICIPATE FLYER
(text only here, graphics and layout will be in final document)

Ph.D. Dissertation Research Invitation to Participate

If you could assess readiness for change for your projects before investing the time, resources, your precious energy and motivation, wouldn't your work be more gratifying?

Readiness for change has implications for all organizations, public health organizations, stakeholders, community populations and individual health behavior change. Organizational readiness for change encompasses 1) planning, 2) implementing and 3) anchoring change to build readiness and sustainability.

In public health, we are all advocating for some type of change, whether with individual behavior change (such as smoking cessation), program or community change (such as master grant applications, process or performance improvement), or organizational or system-level change (such as strategic planning processes, greening government or the Public Health Reauthorization Act/Senate Bill 194). The brutal truth is that 70% of change in corporations fail, according to one study of several hundred companies, mostly because of poor implementation. The principles of building readiness for change are an integral determinant of change initiative success.

Your time in completing this survey will assist researchers in developing a valid, reliable measure of organizational readiness for change, as part of a Ph.D. dissertation research project. This survey will be designed in its final form to help organizations and professionals leading change increase the likelihood of sustainable change.

Various public health associations and organizations have consented to participate. Through your membership affiliation, you should be receiving an invitation to participate via email. If you do not receive one and wish to, contact Melanie Chase at surveyreadiness@yahoo.com or call 303-960-2878.