

WHEN THE STUDENT IS READY, THE TEACHER
WILL APPEAR: THE IMPACT OF CHANGE ON
READINESS TO LEARN

By

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As individuals go through life and experience the workplace they encounter changes, new and novel situations, planned and unplanned. Each of those encounters is an opportunity for an individual to appraise their readiness to deal with that situation. Organizational change literature predominantly focuses on individual negative appraisals of change, but individuals at work often experience many unplanned changes at the same time. This study first examines whether change can act as a primer that readies someone to learn, then examines whether the individual differences of dispositional trust or self-negative feedback seeking moderate the effect of change on learning readiness. I review overall change, and then I differentiate between positive change and negative change. This study's findings support the hypothesis that an individual experiencing change has a direct effect on their readiness to learn. Further, it shows that some minimum amount of change is necessary to prime that readiness, but too much change can suppress it. Individual enrollment in learning opportunities supported this conclusion for both positive and negative change. This research extends the classic theory of stress response, using appraisal theory to make application for individual learning. Self-report data on readiness to learn during negative change revealed a relationship between negative attitudes and positive actual enrollment, supporting theory that coping can drive readiness to learn. Results of the study did not support the idea that the individual differences of self-negative feedback seeking or dispositional trust would moderate the change to learning readiness relationship. Some relationships in the data suggest these individual differences may act on individual learning through a different mechanism than learning readiness.

Keywords: organizational change; appraisal theory; readiness to learn; dispositional trust; feedback seeking; change; learning; coping; subject-centered learning; immediate-application centered learning.

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CHAPTER I

INTRODUCTION

“When the student is ready, the teacher will appear.”

This saying is not about timing on the part of the teacher. This saying addresses a student who is ready and motivated to learn. The student likely has some traits that dispose them to recognize the teacher. Circumstances surely play a part, creating the environment to see an opportunity more clearly. What we want to know is, under what circumstances does the student recognize themselves as a student? Only then can they recognize the teacher; only then can they be ready to learn.

Learning readiness is often referred to as trainability, motivation to learn, or training readiness (Cannon-Bowers, Salas, Tannenbaum, & Mathieu, 1995; Carlson, Bozeman, Kacmar, & McMahan, 2000; Noe, 1986; Robertson & Downs, 1979). Overall, the thrust of the discussion is that a person has the opportunity to perceive that they need to develop, and have made the cognitive and emotional appraisal that they are ready and motivated to put forth the effort to learn. The prior research explored how personality traits and situational variables such as climate, manager support, and peer support influence learning readiness (Cannon-Bowers et al., 1995; Colquitt, LePine, & Noe, 2000; Noe, 1986; Payne et al., 2008). As individuals go through life and experience the workplace, they encounter changes, new and novel situations, planned and

unplanned. Each of those encounters is an opportunity for an individual to appraise their readiness to deal with that situation (Folkman, Lazarus, Gruen, & DeLongis, 1986). Thus, if a person experiences too few changes, they will lack sufficient stimulation to learn. Conversely, if faced with far too many novel experiences, individuals will not be willing or able to make constructive appraisals, and the learning process will shut down. The situation plays a primary role in determining if the student is ready to learn.

Also, learning typically does not take place until a certain degree of trust is established that allows the individual to be vulnerable to new ideas (Edmondson, 1999; Knowles, 1979). Being open to ideas is indicative of the individual's willingness to be vulnerable to the learning setting. It is supported by organizational factors, positive learning climate, the perception of opportunities to apply skills and perceptions of support (Birdi, Allan, & Warr, 1997; Forehand & Gilmer, 1964; Tracey, Tannenbaum, & Kavanagh, 1995). The present research explores how individuals decide to open up for new ideas, to put themselves into that willingly vulnerable state, at different levels of organizational change.

While the situation creates the larger context, some individual differences could moderate perceptions about the changing environment. For example, students high in dispositional trust would be more likely to risk getting the first question asked wrong, believing the consequences will be positive no matter their accuracy. Some students high in self-negative feedback-seeking will go even further, being inclined to interpret getting an answer wrong simply as an opportunity to uncover the right answer, rather than as an evaluation of their worth (Gong, Wang, Huang, & Cheung, 2017). Both these traits positively predispose appraisals so that perceptions of change are more positive.

The two individual traits of dispositional trust and self-negative feedback-seeking could lead to increased willingness to be vulnerable, and do so even in the absence of trustworthiness information. First, individuals high in dispositional trust are inclined to extend trust even in the absence of trustworthiness information, and in the presence of conflicting trustworthiness information (Lewis & Weigert, 1985). Second, individuals high in self-negative feedback-seeking are inclined to seek

feedback about their performance, particularly if that feedback is negative, and do not interpret that feedback as evaluative, rather they interpret that feedback as developmental opportunities (Gong et al., 2017). This study proposes that dispositional trust and self-negative feedback-seeking will moderate the experience of change on learning by creating a positive predisposition within individual appraisals. Specifically, individuals high in dispositional trust experience less negative emotion driven by the change because when the change situation includes aspects of distrust, they disregard that, positively predisposing their appraisal of the situation by inserting their positive trust perceptions. In a very similar way, individuals high in self-negative feedback-seeking positively predisposes appraisals as well, viewing even the most negative feedback simply as developmental rather than evaluative, reducing the emotional burden of a situational appraisal. Therefore, this study predicts that these two individual traits positively incline appraisals, making it more likely they will see situations as learning opportunities.

The present study will contribute to theory and research in several ways. First, this study posits that the amount of change experienced by employees will influence learning readiness through the appraisal process. Existing studies frame learning as the reaction to a singular change or planned change (Fugate, Kinicki, & Prussia, 2008; Gowan, Riordan, & Gatewood, 1999; Sheck & Kinicki, 2000); however, the reality is that the workplace forces multiple unplanned changes. Employees may experience too little change to spark learning or experience so much change as to overwhelm the learner. Also, individuals perceive some change as negative, whereas some change is positive. Although many negative changes may suppress learning readiness, positive change can also suppress learning readiness. The mechanism for this link is the individual's perception of how much change is occurring. Whether cumulative negative change has the individual rattled, cumulative positive change has them distracted, or some mix of both, the individual's readiness to learn is impacted. Although the effect of workplace change on emotions has been studied (Ashkanasy & Daus, 2002; Buono & Bowditch, 2003; Kearney & Siegman, 2013), the present research will be the first to

investigate the direct relationship between experiencing change and the individual's readiness to learn; and will investigate the curvilinear relationship between cumulative change and learning readiness.

Second, this study contributes to the learning literature by identifying two individual differences that are predictive of trainability and which moderate the relationship between cumulative change and learning readiness. Although many individual differences are known antecedents to positive learning experiences, such as self-efficacy (Courtright, Colbert, & Choi, 2014) and core self-evaluations (Stanhope, Pond, & Surface, 2013), few traits have been investigated that could influence learning readiness (Bell, Tannenbaum, Ford, Noe, & Kraiger, 2017). The present research examines the extent to which dispositional trust and self-negative feedback-seeking moderate the relationship between cumulative change and learning. This research posits that dispositional trust and self-negative feedback-seeking both positively predispose an individual's appraisal process, reducing the emotional impact of difficult appraisals, and opening avenues for appraisal-seeking behavior. Thus, these opened avenues will foster learning readiness even when change levels are very low.

CHAPTER II

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Prior research has already revealed that individual characteristics (Noe, 1986) and the work environment can influence learning (Colquitt et al., 2000). The environmental aspects focused primarily on climate (Kavanaugh, Zimmerberg, & Fein, 1996) or perceived management support (Birdi et al., 1997). However, the extent to which someone is motivated to learn hinges greatly on the changes experienced at work. Workplace change can act as a stressor (hindrance or challenge) which can interfere with the learning process (LePine, J. A., LePine, M. A., & Jackson, 2004; Mikkelsen, Saksvik, & Ursin, 1998). If we can understand under what levels of change learning is most likely to occur, we can employ several practical strategies to help foster learning in the workplace (Hoskins & Fredriksson, 2008; Lazarus, 1991; Porath, Spreitzer, Gibson, & Garnett, 2012).

Learning is a change in the individual caused by interaction with their environment (Deci, 1971; Judge, Simon, Hurst, & Kelley, 2014), or is shown by a change in behavior as a result of experience (Cronbach, 1963; Knowles, Holton, & Swanson, 2014). As people go through life, they encounter experiences and opportunities that they are prepared for, as well as ones that exceed their current capabilities. Appraisal theory states that we look at the size of the gap between our preparedness and the current situation and make assessments about our ability to close that gap (Folkman et al., 1986). Learning theory states that adults will work to close that

gap, to internalize the knowledge to create a change in their behavior, under certain circumstances. First, they must believe that learning this particular thing will help them; second they must feel they need to learn this particular thing; and third, they must feel ready for learning in general (Noe, 2009). Similarly, the individual has to believe they have the basic skills needed to master the new learning opportunity, and motivation to learn the new concept (Colquitt et al., 2000). Knowles (1975) draws a specific distinction between the concepts of being 'ready' to learn, and being 'motivated' to learn (Knowles, Holton, & Swanson, 2005). Motivation to learn is a mix of internal and external motivators that create a purpose for newly found skills or knowledge. Examples are a better job or higher pay externally, or the desire for greater job satisfaction or quality of life internally. Motivation to learn is what drives a person to persist in the learning process when the topic to be learned gets difficult (Knowles, 1979; Merriam, 2001). Knowles asserts that adults become ready to learn based on having a variety of experiences and their desire to cope with those experiences. The important element of 'readiness' is time. Until a person experiences a specific problem that demonstrates the need for certain new knowledge, a person will not be ready to learn it. They will not see the point, and will not be able to answer questions of 'why' they need to learn. To reach readiness, a person does not need to simply wait; they need to have new and novel experiences; they need to encounter models of superior performance or encounter other stimulating experiences that prime readiness. Because readiness to learn is influenced by the need to learn, this study uses learning readiness as the primary dependent variable to explain how organizational change influences the learning process.

Organizational Change

According to the appraisal theory, it is not an individual's experiences that give rise to emotions; it is how the individual evaluates the situation that drives emotion (Arnold, 1969; Gross & John, 2003). More specifically, an individual's evaluation of their own ability to handle an experience weighs heavily on the emotional outcomes of change (Lazarus & Folkman, 1987). The event

itself is separate from the emotion which is explained by the individual's self-appraisal (Edwards, Franco-Watkins, Cullen, Howell, & Acuff, 2014; Spector & Jex, 1998). Although organizational change literature predominantly focuses on an individual's negative appraisal of change (Fugate et al., 2008; Gowan et al., 1999; Sheck & Kinicki, 2000), individuals at work often experience many unplanned changes at the same time. These multiple unplanned changes dramatically influence the individual's perception of available resources and time to reflect. Cumulative changes provide many opportunities for self-appraisals, which means many opportunities to prime readiness, but also creates the potential to dilute efforts, reducing perceptions of attainability.

We know individuals assess the same situations very differently. That difference in assessment gives rise to differential emotional states out of the same or similar circumstances (Lazarus & Folkman, 1987; Lazarus, 1991). Individuals are then left with differing affective states that in turn affect their general emotions and subsequent behavioral responses (Roseman, Spindel, & Jose, 1990). Positive emotions typically arise from positive appraisals and negative emotions from negative appraisals (Smith, Haynes, Lazarus, & Pope, 1993). Some changes could be perceived as neutral by the change manager, and positive by some individuals yet negative by others. Thus, the valence of change appraisals is important in understanding how organizational change impacts learning readiness. Consider a company that changes the process for annual benefit elections. They previously used a paper system filed with the local human resources manager, but now have employees log into a kiosk to make their selections. Some may view that as a positive change that in turn drives positive emotions, whereas others view that as a negative change that in turn drives negative emotions. Even more interesting are people who may view that as a neutral change. They see the kiosk, right outside the human resources manager's door, and wonder what the point was of using a kiosk. While on the surface the reaction is neutral, the most common emotional reaction is more likely to be negative than positive. People expect to

reap positive value on change efforts, and when changes seem pointless, it drives negative emotional reactions. Although I believe neutral changes could be perceived negatively, because total impact of neutral valences is difficult to measure, this concept is not included in the current hypotheses.

The differential appraisals give rise to complex emotional responses, which in turn can motivate or hinder learning. If a person experiences little change or the changes are neutral, nothing has happened that stimulates the feeling that something is needed. The learner will not be ready to learn as they do not perceive the need. Just as different people could interpret neutral changes in both ways simultaneously, neutral changes could prime learning readiness in some, and suppress the same in others.

What is unknown is how both valence and amount of change prime or suppress learning readiness. If a person experiences very little change at work, we assume their duties and external challenges remain constant. Changes help define roles, highlight skill gaps, and recognize knowledge in others that could be beneficial (Bartel, 2001; Diener, 1984). Many individuals will not seek change without an external impetus, will not make new social comparisons, and therefore will not form new appraisals (Kelly & Allison, 1999). Social comparisons motivate individuals to learn (George, 2007; Rupp, 2011). Similarly, over time in a stable work setting, coworkers near one another end up with increasingly similar skill sets. Networking with agents of similar abilities has less value for learning because of the perceived equity of social comparisons (Holland, 1995). With increasing similarities, we would expect those with very little change to have no impetus to become ready to learn. The same general pattern of results is explained with Selye's (1956) stress response curve, or Yerkes-Dodson's law (Yerkes & Dodson, 1908). Task mastery, cognition, or performance are best when an individual is in an optimal arousal state, above or below which performance decreases (Mendl, 1999). Some stressful

arousal prepares the individual for the next challenge, but excessive stressful arousal exhausts the individual's ability to respond (Selye, 1976).

With more changes experienced at work, there are different social interactions. An increase in the number of changes should also create increasing variety of work tasks, type, and nature of novel experiences. A reasonable level of cumulative change would elicit appraisals related to a sense of need, with the belief that learning something new would be helpful, priming learning readiness (Noe, 2009). Similarly, the reasonable size and scope of the changes drive appraisals that seem attainable, priming learning motivation (Colquitt et al., 2000; Gross & John, 2003). In this study, it is expected that experienced change at moderate levels is the strongest driver of motivation and readiness to learn. Considering the value of change, the positive change should motivate learning even more strongly. Negative change, while it can elicit negative affect, at moderate levels should still create the sense of need for learning, and at a level that seems attainable, so while its effect may be lower than for positive change, negative change at moderate levels should still positively influence learning.

Some prior research implies that the negative emotions and frustration associated with negative changes could suppress individual readiness to learn (Fugate, Prussia & Kinicki, 2012). This is a complicated issue, as it is also known that certain key coping mechanisms can motivate certain kinds of learning (Fugate, Kinicki, & Prussia, 2008). Although the natural desire to approach positive stimuli and avoid negative stimuli seems as though it would prevent learning readiness (Judge et al., 2014), according to the appraisal theory, the coping mechanism could overcome this and positively influence readiness to learn. The present research expects that a person under an optimal amount of negative change will become ready to learn, but that it will either be less effective than positive change or act over a different range of change values than total or positive change.

Just as too little change does not foster fresh exchanges, leading to stagnation, too much change signals complexity that may lead to negative appraisals (Kauffman, 1993). The present study expects that at higher amounts of change, the negative appraisals will reduce readiness to learn because employees will assume that no amount of effort will improve the situation. Too much change is also a distraction. What may be contrary to prior intuition is that at high levels of change, the present research expects that positive change will negatively impact learning. If there are an extremely large number of changes (even positive), employees will not have enough contact time with each new challenge to make accurate appraisals; without accurate appraisals, employees cannot use those assessments to become ready to learn. Also, with lots of changes, the perceived attainability of the needed learning volume is expected to become negative, even with the positive change. Figure 1 illustrates the set of hypotheses.

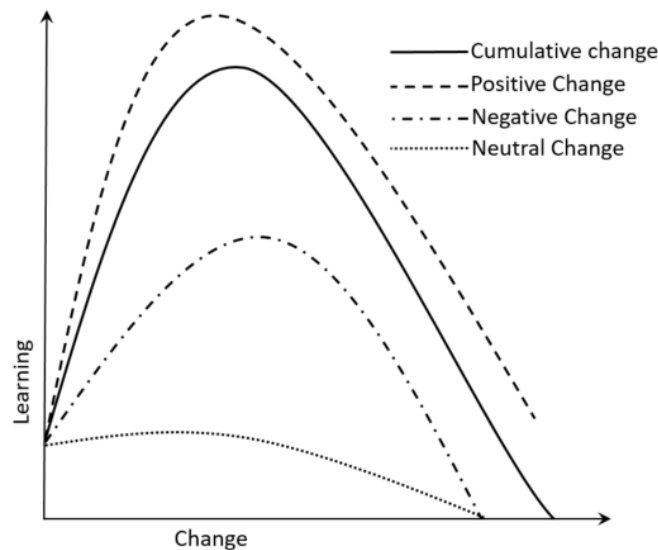


Figure 1. Illustration of the hypotheses.

Hypothesis 1: *There will be a curvilinear relationship between total cumulative change and learning readiness. Learning readiness improves with increasing amount of change up to moderate rates of change. At higher levels of change, learning readiness decreases.*

***Hypothesis 2:** There will be a curvilinear relationship between positive change and learning readiness. Learning readiness improves with increasing amount of positive change up to moderate rates of change. At higher levels of positive change, learning readiness decreases.*

***Hypothesis 3:** There will be a curvilinear relationship between negative change and learning readiness. Learning readiness improves with increasing amount of negative change up to moderate rates of change. At higher levels of negative change, learning readiness decreases.*

Moderators of the Cumulative Change → Learning Readiness Relationship

Several individual differences and environmental factors are already known to influence the learning process (Bell et al., 2017; Colquitt et al., 2000; Forehand & Gilmer, 1964). For example, achievement motivation (Mathieu, Martineau, & Tannenbaum, 1993), internal locus of control (Noe, 1986; Noe & Schmitt, 1986), and conscientiousness (Martocchio & Judge, 1997) all tend to persist in learning behaviors during non-ideal circumstances. Each of these known constructs functions through persistence, a sense of power to make a change, or planning. This is in contrast to dispositional trust and self-negative feedback-seeking that function through a predisposition to positive appraisals. This is a critical distinction because most approaches to managing change focus on individual differences that are enduring and immutable. However, the appraisal theory provides an avenue for learning to cope with change. Dispositional trust and self-negative feedback-seeking are potential coping mechanisms that are not as immutable as personality variables. Other known learning antecedents such as career commitment (Allen & Meyer, 1996; Mowday, Steers, & Porter, 1979), organizational alignment and valence (Cannon-Bowers et al., 1995; Mathieu & Zajac, 1990), self-efficacy (Judge, Locke, Durham, & Kluger, 1998), anxiety (Martocchio & Webster, 1992), and career exploration (Noe & Wilk, 1993) are all influenced by many factors other than the amount of change experienced. Prior studies of environmental factors similarly focuses on a person's direct interaction with those challenges, such as climate

for knowledge transfer (Tracey et al., 1995), available resources and opportunities to use skills, and perceptions of manager support (Birdi et al., 1997; Clark, Dobbins, & Ladd, 1993). This study departs from these traditional predictors of learning to examine how individual differences can bias the appraisal process and positively influence learning.

Readiness to Learn: Proposed Moderators to Change

Dispositional Trust

Dispositional trust—referred to as trust propensity in some research—is an individual’s inclination to extend trust before it is warranted, or to continue to extend trust even in the presence of mixed or negative trustworthiness information (Lewis & Weigert, 1985). It is important to distinguish the individual trait of dispositional trust from the many facets of situational trust. Most trust constructs focus on how a person reacts to external factors like trustworthy behavior on the part of the trustee, or perceptions of justice (Colquitt & Rodell, 2011). One exemplary definition of trust defines it as a person’s willingness to be vulnerable based on the perception that the trustee has previously acted in a trustworthy manner and will continue to do so (Mayer, Davis, & Schoorman, 1995).

The present research focuses on a different manifestation of the willingness to be vulnerable. Dispositional trust is a personal trait that opens the door to trust without actually constituting it. The cognitive element in trust “...is characterized by a cognitive “leap” beyond the expectations that reason and experience alone would warrant—they simply serve as the platform from which the leap is made” (Lewis & Weigert, 1985, p. 971). Other research raised questions as to whether individuals have certain traits that lead them to draw different conclusions during similar experiences (Butler, 1991). It is this tendency to draw different conclusions during similar experiences that links dispositional trust to the present research. Individuals high in dispositional trust carry with them a predisposition to positive appraisals. This appraisal bias causes them to

extend trust-like behaviors in situations that do not yet warrant it. When an individual encounters unfamiliar actors (Bigley & Pearce, 1998), a new experience with an absence of trustworthiness information (Kramer, 1999), or a novel situation where behaviors have not yet been rewarded with trust (Mcknight, Cummings, & Chervany, 1998), most people will withhold trust and trust-like behaviors, like vulnerability, until they have a reason to display those behaviors.

Dispositional trust can prompt an individuals' appraisals and in turn their actions, promoting exposure to vulnerability even when nothing in the situational context appears to warrant this risk (Mcknight et al., 1998). This individual experiences the negative emotions, but proceeds to extend trust behaviors despite those emotions.

This study asserts that dispositional trust creates a disposition toward positive appraisals, motivating certain individuals to persist in their willingness to be vulnerable even when the situational trust cues indicate otherwise. This willingness to persist in vulnerability behaviors allows learning behaviors to persist during levels of change that would suppress learning behaviors in individuals low on dispositional trust.

Hypothesis 4: *Dispositional trust positively moderates the relationship between cumulative change and readiness to learn.*

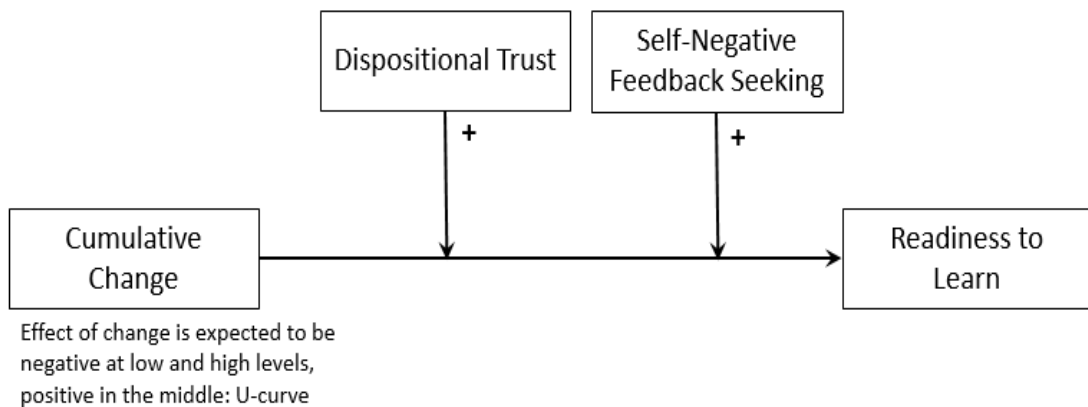


Figure 2. Illustration of the full hypothesized model.

Self Negative Feedback-Seeking

Individuals who seek negative feedback about themselves view negative feedback as useful for improving competence (Button, Mathieu, & Zajac, 1996). This mechanism represents a positive appraisal predisposition similar to a dispositional trust. The appraisal theory calls for people to interpret negative feedback as evaluations of worth, giving rise to a mix of negative appraisals and in turn negative emotions. People are averse to negative feedback due to the uncertainty of how to perceive new negative performance information or how to act on it (Audia & Locke, 2003). Under most circumstances, people view negative feedback as indicative of achievement failure (Gong et al., 2017) because it is an evaluative appraisal that elicits negative emotions. Under certain circumstances, two people can experience the same negative feedback but appraise their secondary emotions differently (Siemer, Mauss, & Gross, 2007).

This current study asserts that individuals high in self-negative feedback-seeking carry a positive appraisal inclination that causes them to see the utility in negative appraisals; viewing them as diagnostic rather than evaluative (Gong et al., 2017). They will interpret negative change appraisals as personal feedback in the form of experiences or societal review, and their predisposition toward positive appraisals will cause them to interpret those as signals that it is time to learn something new for improvement. This allows them to interpret a wider array of situations as manageable; thus, influencing their readiness to learn. This is a different mechanism than in the previous dispositional trust discussion. A person high in dispositional trust experiences the negative emotions but chooses to move forward despite those emotions. Self-negative feedback-seeking causes the person to evaluate the negative situation differently; this person does not experience the negative emotions, so proceeds as though the experience was positive.

Individuals high in self-negative feedback-seeking will actively solicit verbal or situational feedback. In contrast to someone who sets very attainable goals to avoid negative evaluation of their abilities (Bagozzi & Pieters, 1998; Noe, Tews, & Marand, 2013), a person high in self-negative feedback-seeking may intentionally set difficult or even unrealistic goals or intentionally engage in difficult tasks to gain useful negative feedback information. This process is similar to known learning strategies to take the initiative to learn from failure (Baek & Thompson, 2016; Knowles, 1975). It is the predisposition toward positive appraisals that drives the self-negative feedback-seeking individual to view changes and negative outcomes as valuable for self-improvement.

Hypothesis 5: Self-negative feedback-seeking positively moderates the relationship between cumulative change and readiness to learn.

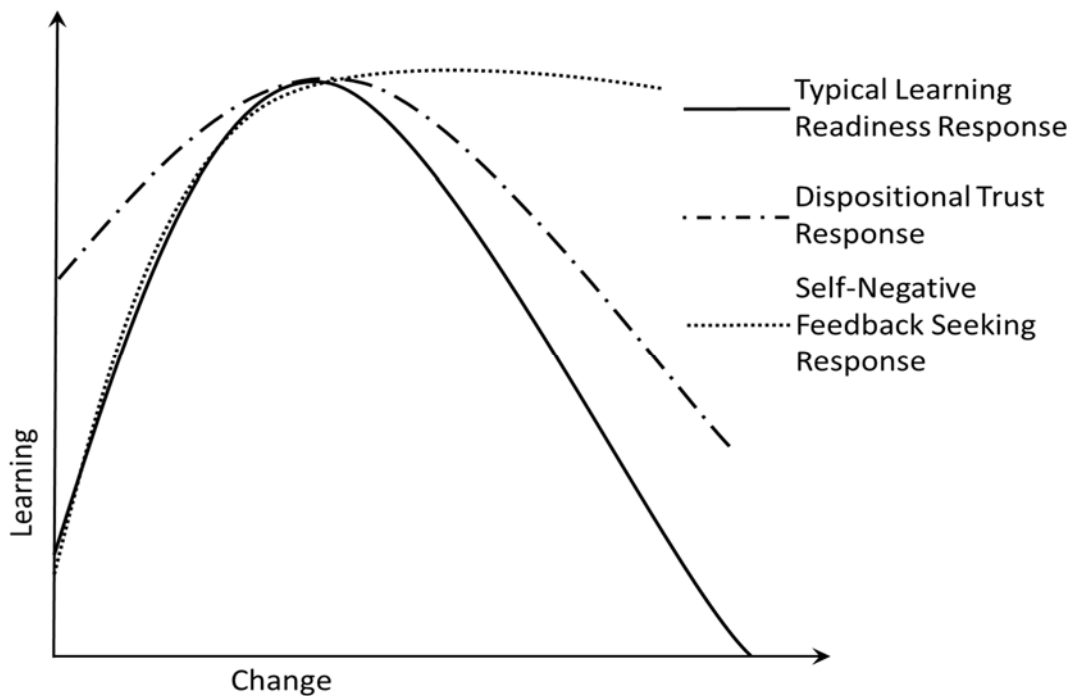


Figure 3. Graphic representation of hypotheses 4 and 5.

Alternate Explanations

Two additional constructs are frequently explored in the context of change. Anxiety is known to diminish learning in certain settings (Richards & Gross, 1999; 2000), and anxiety is known to increase when people encounter unknown situations in which they have an unestablished sense of efficacy (Bandura, 1977; Kamer & Annen, 2010). It will be important to test whether any relationships asserted in the present research are being driven by these previously known relationships. Boredom is known to diminish certain kinds of motivation (Amabile et al., 1994) and could become a factor for some rates of change in the present study (Reijseger et al., 2013). It is possible that boredom could be a linking factor between change and learning, as it could be an implied detractor from thriving (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). As such, it is important that the present study rule out anxiety and boredom as alternative explanations for the observed relationships.

CHAPTER III

METHODOLOGY

Participants and Procedures

Data were collected from a large privately held non-durable consumer goods manufacturer. This particular company was chosen for its size and the variability in experienced change. For example, some departments have grown at 24% for 17 years whereas others have grown at less than 5%, with multiple market entries, exits, mergers, and divestitures to drive variety in the data. The workforce is more than 4,000 employees, spread out between a corporate office and 27 locations nationwide. This study's participants were full-time employees over 18 years of age, based in the United States, and employed for more than 30 days. A self-report questionnaire was e-mailed via Qualtrics to 3,381 employees. Participation was voluntary. Employee data was collected by employee number (see Appendix), and includes archival data on employee participation in training and self-development programs. To protect the confidentiality of employees, the employee number was used to match the self-report data to company records by Dr. Bryan Edwards, and all identifiable data were subsequently deleted. The first page of the survey asked participants to review an information participation sheet. Participation was encouraged by providing a lottery of prizes, including an iPad, Apple Watch, Fitbit, two iPod Shuffles, and five \$50 Amazon Gift Cards. Participant winners were selected by the company's Human Resources department.

A power analysis was utilized to determine the desired response size before distributing the survey (Cohen, 1992; Erdfelder, Faul, & Buchner, 2007; Faul, Erdfelder, Buchner, & Lang, 2009). Considering the need to evaluate the curvilinear relationships, the desired sample size was approximately 300 respondents. Overall, 839 respondents began the survey. Of those, 703 completed all the demographics information and answered the first few survey items, with 628 respondents completing all survey items (21% response rate). Initial theoretical models were tested using only the 628 completed surveys, using all 703 surveys plus maximum likelihood estimation in MPlus to account for missing data, and a few other subsets based on attention-check items or time spent in the survey. Model fit and estimates were minimally affected, so the entire data set of 703 respondents was retained for all subsequent calculations.

The full set of 703 participants who responded to any items were used as the final sample, and missing data were replaced using full information maximum likelihood. Demographics are reported on the 628 who completed the entire survey. Of those 628, 438 (70%) were men, and 190 (3%) were women. The average age of the employees who responded was 39.7 years old ($SD=10.3$), the youngest was 22, and the oldest was 65. Of the respondents, 57.6% identified as White, 20.2% as Hispanic, 8.6% as Asian, 7.6% as Black or African American, 2.1% as two or more races, 1.3% as Native Hawaiian or Pacific Islander, 0.6% as Native American, and 1.9% declined to answer. On average, employees had been with the organization 3.5 years ($SD=2.9$). The position level of respondents was Vice President/Director 7.2%, Manager 24.4%, Supervisor 11.0%, and Individual Contributor 57.0%. The location of respondents were Corporate Main Office 31.2%, Corporate Office based Offsite 10.4%, or Plant Locations 58.4%. Fifty-four percent were married, 34.4% were single, and 7.8% declined to answer.

Measures

Change Measures

Cumulative change. The cumulative change was measured using the 33 items from the Cumulative Change Scale (CCS) developed by Cullen, Webster, Edwards, and Braddy (under review). A sample item from this scale is “Change in your opportunities for promotion.” First, participants indicated whether they had experienced each of the 33 listed changes in the CCS in the last six months. The number of changes experienced was recorded as the total cumulative change score. For the balance of this part of the questionnaire, the Qualtrics survey was programmed to skip items participants did not indicate they had experienced. Second, participants rated the impact that each change had on their job using a 5-point scale (1 = very small extent, 5 = very large extent). Third, participants indicated the valence of each change as positive, negative or neutral. The number of items indicated as positive is the positive change score. Negative and neutral change scores were calculated the same way. Cullen et al. (under review) reported test-retest reliability for the CCS of .75 with a one week time interval.

Stressful change. Change stress was measured using four items from the change stress scale developed by Martin, Jones, and Callan (2005). This scale was included to provide validation for the cumulative change scale if that proved necessary. In the analysis, controlling for stressful change showed no differences in results from not controlling for stressful change. Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1= strongly disagree, 5 = strongly agree). An example item is “In general, the change process is upsetting.” The measure was scored by obtaining the mean of the four items. The estimate of internal coefficient alpha for the stressful change measure was $\alpha = .86$, and composite reliability .84.

Trust Measures

Dispositional trust. Dispositional trust was measured using an 8-item scale adapted from the dispositional trust scale (Mayer & Davis, 1999). Two additional items were added to validate increased generalizability. Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item is “One should be very cautious with strangers.” The measure was scored by obtaining the mean of the ten items. The coefficient alpha for scores on the dispositional trust measure was $\alpha = .75$, and composite reliability .79.

Willingness to be vulnerable. Willingness to be vulnerable can be used to imply that trust is present. It was included in this study to allow for additional validation and possible control. Prior research indicates that dispositional trust is an individual difference that has a slow or limited response to the environment (Joireman, Smith, Liu, & Arthurs, 2015), whereas vulnerability is typically a more direct response to the environment (Sogunro, 2014). Including both measures allowed this research study to explore whether these metrics diverge under certain rates of cumulative change. Willingness to be vulnerable includes four items adapted from the vulnerability scale (Mayer & Davis, 1999). A fifth item was added; wording for which was pulled from the discussion in the original study (Joireman et al., 2015). Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item is “I would be willing to let another department have complete control over my future in this company.” The measure was scored by obtaining the mean of the five items. The coefficient alpha scores on the willingness to be vulnerable measure were $\alpha = .15$, and composite reliability .34.

Feedback-Seeking Measures

Feedback-seeking. Self-negative feedback-seeking is a single quadrant of a feedback-seeking scale developed by Gong, Wang, Huang, and Cheung (2017). Their full scale is used herein to provide opportunities for validation or controls. The scale includes 24 total items, six from each feedback-seeking quadrant. Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item from the *self-negative quadrant* is “I often seek comments concerning what areas I did not do well in upon task completion.” An example item from the *self-positive quadrant* is “I often indirectly ask information on what I performed well in.” An example item from the *other-negative quadrant* is “I often pay attention to my supervisor’s negative reactions to colleagues’ work.” An example item from the *other-positive quadrant* is: “I often ask information from third parties (e.g., supervisor) regarding what colleagues performed well in.” The self-negative measure was scored by obtaining the mean of the six items. The coefficient alpha for scores on the self-negative feedback-seeking measure was $\alpha = .70$. Alphas for self-positive, other-negative and other-positive were .90, .92 and .91 respectively. The four composite reliabilities were .78, .90, .91 and .91.

Boredom and Anxiety Measures

Anxiety and boredom. Two constructs were identified as possible confounding constructs: anxiety and boredom. The anxiety scale was adapted from the motivational components of a test-taking anxiety scale (Arvey, 1990). Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item from the *anxiety scale* was “I usually get very anxious about changes at work.” The anxiety measure was scored by obtaining the mean of the six items. The coefficient alpha for scores on anxiety was $\alpha = .82$, and the composite reliability .82.

The boredom scale was taken from the 5-item Dutch Boredom Scale (Reijseger et al., 2013). Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item from the *boredom scale* was “During work time I daydream.” The boredom measure was scored by obtaining the mean of the five items. The coefficient alpha for scores on boredom measure was $\alpha = .78$, and composite reliability .79.

Learning Readiness Measures

Training courses. The number of training courses each respondent participated in was from the company’s human resource records. Readiness to learn was operationalized as the total number of voluntary training courses per respondent. Actual training attended was then represented as a simple total number of events they participated in. The records indicated that the number of training sessions attended by participants ranged from 0 to 9 total training events.

Intrinsic learning. Intrinsic learning was measured using three items adapted from the learning from oneself scale (Noe et al., 2013). Informal learning that is self-directed and intrinsic is closely associated with the learning mechanism of readiness, and attitudes about informal learning are indicative of readiness to learn. Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item from the *learning from oneself scale* was: “In my job, I have opportunity to learn by reflecting about how to improve my performance.” Additionally, the perceptions of opportunity to learn through reflection or experimentation are closely associated with the learning mechanism of readiness. Six items from reflection and experimentation scales were also included (Nikolova, Van Ruysseveldt, De Witte, & Syroit, 2014). Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Example items were: “When confronted with difficulties in my tasks, I am given the

opportunity to consider what the best possible approach is;” “In my job, I am offered sufficient time to find out how to conduct tasks more efficiently.” Additional details of the self-reported training measures are included in the Appendix. The intrinsic learning measure was scored by obtaining the mean of the nine items. The coefficient alpha for scores on the intrinsic learning measure was $\alpha = .92$ with composite reliability .92.

Extrinsic learning. Extrinsic learning measures the opportunity to be ready to learn from others, or the individual perception that others represent a learning opportunity. As such, measuring attitudes and perceptions about this concept represented valuable exploration for the current study. Extrinsic learning was measured using six items from the learning from others scales (Nikolova, Van Ruysseveldt, De Witte, & Syroit, 2014). Participants were asked to indicate how strongly they agreed with the statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). An example item from the *learning from others* scale was: “My colleagues are eager to collaborate with me in finding a solution to a work problem.” The extrinsic learning measure was scored by obtaining the mean of the six items. The coefficient alpha for scores on the extrinsic motivation measure was $\alpha = .82$ and composite reliability .81.

CHAPTER IV

RESULTS

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was performed on all ten self-report variables simultaneously (stressful change, dispositional trust, self-negative feedback-seeking, self-positive feedback-seeking, other-negative feedback-seeking, other-positive feedback-seeking, boredom, anxiety, and intrinsic learning). Model fit was assessed with the chi-square statistic and several other fit indices, such as the root mean square error of approximation (RMSEA; Steiger, 1990) and comparative fit index (CFI; Bentler, 1990). The CFI assesses the relative improvement in fit compared to the independence model and is resistant to errors associated with sample size. Satisfactory models yield CFI values greater than .90 (Hu & Bentler, 1999). The RMSEA is a parsimony-adjusted index that accounts for model complexity and was used to assess lack of model fit. RMSEA values less than .05 indicate close approximate fit, values between .05 and .08 indicate a reasonable error of approximation, and values greater than .10 suggests a poor fit (Browne & Cudeck, 1993).

The CFA yielded good model fit, $\chi^2 = 26,762$ ($df=2,222$), $p < .05$; CFI) = 0.85; RMSEA = 0.048, 90% confidence interval 0.047 and 0.050, especially given that the measurement model for all ten variables was estimated simultaneously. With the exception of one willing to be vulnerable

item, all standardized estimates were statistically significant ($p < .05$), and most had estimates above .7. Only four items had standardized factor loadings less than .3 (one dispositional trust, one self-negative feedback, and the two willingness to be vulnerable items). Because these were part of previously validated studies, all of these items were retained for the analyses. During subsequent model tests, problems with two dispositional trust items prevented good overall model fit. These were the same two items with low standardized estimates in the CFA (one below 0.3, one below 0.4), and were the only two dispositional trust items that were worded in the opposite direction of the other items (often referred to as reverse coded items). Therefore, the two reverse coded dispositional trust items were not used. Likewise, all items in the willingness to be vulnerable scale showed problems. As a result, the willingness to be vulnerable variable was not used in any analyses nor was the two dispositional trust items in measuring the dispositional trust variable. (See Table 1 in the Appendix).

Hypothesis Testing

Readiness to learn was operationalized throughout the hypothesis testing using the total number of training courses attended per respondent. This was made available as part of the archival employee records. The act of engaging in a learning opportunity is the clearest indication of learning readiness. Since many of the records contained zero count values, these data were treated as count data with low base rates modeled in MPlus assuming a Poisson distribution (Papoulis, 1984).

Each of those conclusions were also tested using the self-report data on intrinsic learning items from the survey. The intrinsic learning self-report items involves individual's perceptions around the opportunity to learn which fit the theory of self-motivation toward learning readiness (Noe et al., 2013; Nikolova et al., 2014). Using MPlus, intrinsic learning was regressed against each predictor, and the predictor was squared to obtain the model fit against the linear and quadratic

functions. In each case, the self-report intrinsic learning items were divided into three parcels and a composite for each parcel was created. The parcels aligned with theoretical groupings and prior use of the same items in prior studies. Specifically, there were three items each for the sub-facets—learning from oneself, learning through reflection, and learning through experimentation (Noe et al., 2013; Nikolova et al., 2014). Latent variables were used for those variables described in the CFA above, but the total change, positive change, and negative change were not latent variables. Therefore, composite variables (sum of a number of changes) were used to create the interactions to test hypotheses 4 and 5. Before testing moderation in hypotheses 4 and 5, the grand-mean centered version of each independent variable was computed before computing the interaction term.

Hypothesis 1 stated: *There will be a curvilinear relationship between total cumulative change and learning readiness. Learning readiness improves with increasing amount of change up to moderate rates of change. At higher levels of change, learning readiness decreases.*

Our primary interest is the total number of training courses the respondents completed, which were records obtained from the Human Resources Department. The training records data revealed that 427 out of the 839 respondents had participated in some structured training in the past six months. The data also indicated how many sessions the individual participated in, ranging from 0 sessions to 9 sessions in this data set. Because of the nature of a data set that is predominated by participants with zero participation, these data were treated as count data with low base rates. Data like these should be modeled with equations that assume a Poisson distribution (Papoulis, 1984). The Poisson distribution is a single-parameter distribution where the equality of the mean and variance are typically a function of the process that produced the count data. A maximum base likelihood (ML) estimation model will underestimate the standard errors (Imrey, 2000), so the MPlus function was used for maximum likelihood with mean, covariance, and standard errors robust to non-normality (MLR), as well as with an integration

algorithm. Using this approach, I regressed total courses taken on total change and the quadratic term. Total courses were significantly related to both total change ($\beta=.085, p<.05$) and the quadratic total change squared ($\beta=-.003, p<.05$). Therefore, hypothesis 1 was supported. The resulting equation can be used to graphically represent these relationships. Note that because the MLR method in MPlus uses a Huber-White covariant adjustment (Huber, 1967; Kleiber & Zeileis, 2006; White, 1980), the resulting model estimates for the dependent variables are standardized to a zero mean. The range of values for total change in our data set was 0 to 33. The effects are depicted in Figure 4 below.

The effect of the total change on learning was also analyzed using the self-report data of intrinsic learning. The regression of intrinsic learning on total change revealed a nonsignificant relationship with total change ($\beta=.001, p>.05$) and the quadratic term ($\beta =-.007, p>.05$). Therefore, hypothesis 1 was not supported using the intrinsic learning variable. The intrinsic learning measure is indicative of self-reported attitudes about the environment being conducive to pursuing self-directed and internally reflective training opportunities.

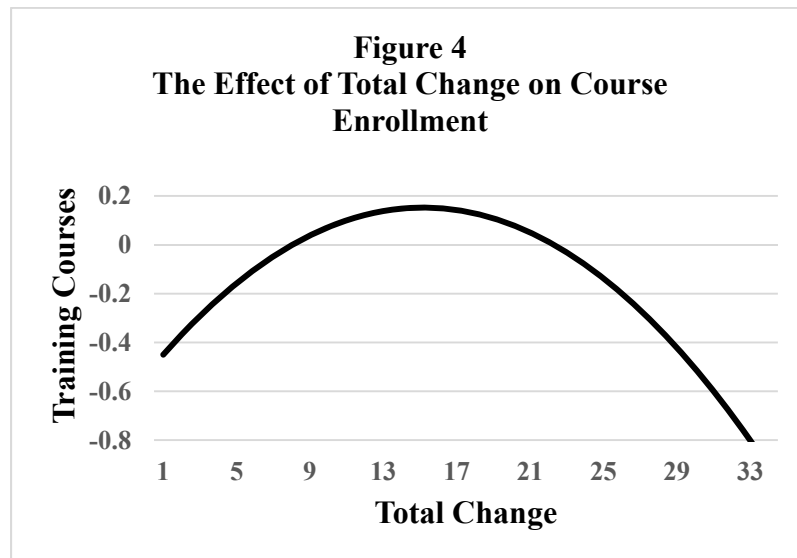


Figure 4. The effect of total change on course enrollment.

Hypothesis 2 stated: *There will be a curvilinear relationship between positive change and learning readiness. Learning readiness improves with increasing amount of positive change up to moderate rates of change. At higher levels of positive change, learning readiness decreases.*

Testing this hypothesis using the training records as the dependent variable, I repeated the Poisson technique described above to regress courses taken on total positive change. Courses taken was significantly related to both total positive change ($\beta = .117, p < .0001$) and total positive change squared ($\beta = -.006, p < .05$). The effects are depicted in Figure 5. The MPlus regression of intrinsic learning on total positive change revealed a significant linear relationship with positive change ($\beta = .085, p < .001$) and positive quadratic relationship ($\beta = -.003, p < .05$). The effects are plotted in Figure 6. The relationship is curvilinear with little learning readiness near zero change and increasing as change increases. It also suggests there is some level of change at which, even when all the change is positive, learning readiness declines, being suppressed at high rates of positive change. The total courses that were taken and secondary self-report learning data both support hypothesis 2.

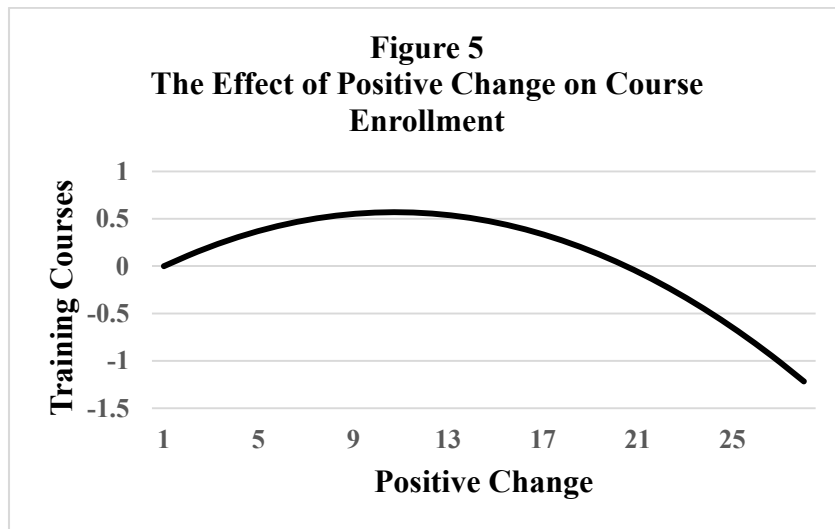


Figure 5. The effect of positive change on course enrollment.

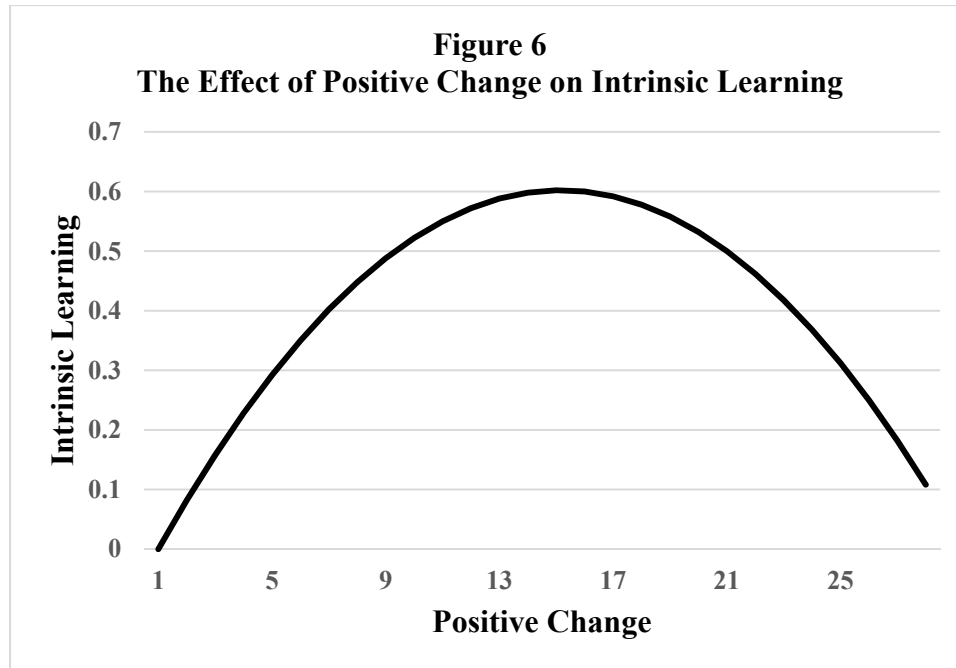


Figure 6. The effect of positive change on intrinsic learning.

Hypothesis 3 stated: *There will be a curvilinear relationship between negative change and learning readiness. Learning readiness improves with increasing amount of negative change up to moderate rates of change. At higher levels of negative change, learning readiness decreases.*

Hypothesis 3 was tested with the total courses taken using the Poisson technique described above to regress courses taken on total negative change. Courses taken was significantly related to total negative change ($\beta=.100, p<.05$), but was not significantly related to the quadratic term at the 95% level; but was significant at the 90% level ($\beta=-.009, p<.10$). The effects are depicted in Figure 7. The quadratic relationship is an inverse u-shaped curve which was consistent with hypothesis 3. The regression of intrinsic learning on total negative change revealed a significant linear relationship with total negative change ($\beta= -.098, p<.0001$) and the quadratic term at the 90% level ($\beta=.006, p<.1$). The effects are depicted in Figure 8. Although a statistically significant curvilinear relationship between negative change and intrinsic learning was obtained, the curvilinear relationship was in the opposite direction of that which was predicted. The results

with intrinsic learning suggested that negative change initially suppresses perceived intrinsic learning, then later fosters it. This result predicts ongoing growth based on the observations in the data and does not support the idea that learning readiness will be suppressed at high rates of negative change. Therefore, the pattern of results was supportive of hypothesis 3 using the number of courses taken and not the self-reported intrinsic learning motivation.

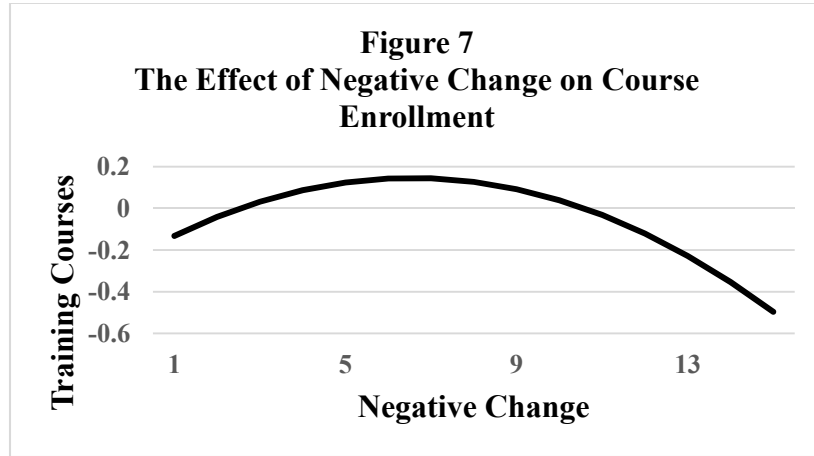


Figure 7. The effect of negative change on course enrollment.

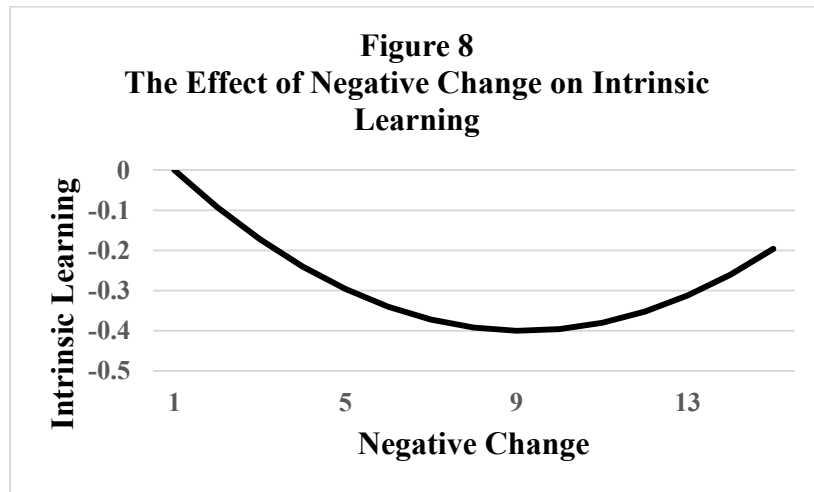


Figure 8. The effect of negative change on intrinsic learning.

Hypothesis 4 stated: *Dispositional trust positively moderates the relationship between cumulative change and readiness to learn.* The count data analysis was repeated using the Poisson technique

described above to regress total courses taken on total change moderated by dispositional trust, and the results were not statistically significant ($\beta=-.167, ns$), and neither was the interaction of change with dispositional trust ($\beta=.010, ns$). These results do not support Hypothesis 4. The regression of intrinsic learning on total change moderated by dispositional trust revealed that when moderated by dispositional trust, the relationship between intrinsic learning and total change was not statistically significant ($\beta=-.002, ns$). The relationship between intrinsic learning and the quadratic term ($\beta=-.002, ns$) was also not statistically significant. These results do not support Hypothesis 4.

Hypothesis 5 stated: *Self-negative feedback-seeking positively moderates the relationship between cumulative change and readiness to learn.* The Poisson regression was repeated as described above to regress total courses taken on total change, and the interaction was not statistically significant. The regression of intrinsic learning on total change moderated by self-negative feedback-seeking revealed no significant paths. Intrinsic learning was not statistically significantly related to self-negative feedback-seeking ($\beta=.047, ns$) nor the interaction of self-negative feedback-seeking and change ($\beta=-.003, ns$). The relationship with total change ($\beta=-.008, ns$) and with total change squared ($\beta=.001, ns$) were also not significant. These results do not support Hypothesis 5. Table 2 shows a summary of all tests conducted in the stated hypotheses (See Appendix).

Anxiety and boredom were two other constructs projected to moderate the relationship between change and motivation to learn. Therefore, the above analyses were replicated using anxiety and boredom as two independent variables. A summary of the item estimates can be found in Table 3 (See Appendix). The count data analysis was repeated using the Poisson technique described above to regress total courses taken on total change. The interaction with anxiety was not statistically significant. The interaction regarding boredom was also not statistically significant. The regression of intrinsic learning on total change moderated by *anxiety* showed only one

significant path, the relationship between anxiety and learning ($\beta=-.441, p<.05$). The regression of intrinsic learning on total change moderated by *boredom* showed only one significant path, the relationship between boredom and learning ($\beta=-.302, p<.05$). In both cases, the interaction with change was not statistically significant. None of these results would support an additional hypothesis for boredom or anxiety.

CHAPTER V

CONCLUSIONS

Discussion

This research had two main interests: 1) to understand if change can act as a primer that readies someone to learn, and 2) whether certain individual differences can foster that readiness. First, a combination of learning readiness concepts and appraisal theory implies that when there is too little change, the individual does not have the opportunity to perceive a gap and assess that they need to learn something to close that gap, so change is necessary to prime learning readiness (Arnold, 1969; Deci, 1971; Folkman et al., 1986). That pursuit of improved performance, in turn, relies on not only many opportunities to make self-appraisals, but the degree of interaction with each opportunity, implying that there can be too much change as well (Kauffman, 1993). The results of the present study supported this entire concept. Second, other prior studies implied that individuals whose dispositional trust (Lewis & Weigert, 1985) or self-negative feedback-seeking (Gong et al., 2017) are strong or primed would persist in learning behaviors more strongly than other individuals. However, the results of this current study did not support my prediction that dispositional trust or self-negative feedback-seeking would moderate the change to learning readiness relationship.

Hypothesis one posited that the relationship between total change experienced at

work and readiness to learn is represented by an inverse u-shaped curve. I claimed that at very low levels of total change learning readiness would be low. As change increases, learning readiness increases with it up to a point, but at very high levels of change learning readiness is suppressed. The number of training courses as the measure of learning readiness supported my hypotheses, but self-report data on learning readiness did not. People enrolled in the most learning opportunities (the training courses) when there was some change present, but not when there was too little or too much. The discrepancy here may be because of the valence of changes perceived. Positive change and negative change can motivate learning but might do so for different reasons, which may be why the self-report data was inconclusive.

Hypothesis two predicted that positive change influences learning readiness in the same way as total change. Both records of actual total courses taken and self-report data on readiness confirmed this theory. What I had asserted and now have evidence of is that there can be too much change, even if all that change is good. This is most likely because learning readiness in the presence of positive change probably follows an NK model (Felin & Zenger, 2013). The number of opportunities to learn or solutions available (N) is dependent on the quality and degree of interaction with each opportunity (K) (Levinthal, 1993), and individuals have a limited capacity for how many accurate self-appraisals they can make at any one time (Baumeister & Tierney, 2011). As the total volume of change increases, even if the emotions around those changes remain positive, the degree of interaction with each change declines due to the sheer number of changes encountered. This reduces the time spent with each self-appraisal. That time does not need to approach zero; it simply has to become constraining enough that the individual is not able to determine what the learning gap is, or how to close it. As the key to learning readiness is believing the learning is both useful and attainable, and a person spending very little time with each appraisal cannot determine what would be attainable or useful, learning is suppressed (Noe, 2009). Thus, each self-appraisal opportunity is reduced to little more than noise.

Hypothesis three claimed that even negative change would positively motivate learning readiness when those changes came at moderate levels. The number of courses taken showed significant positive relationships with negative change just as expected. With zero negative change, there was very little learning readiness. As those negative changes increased, the enrollment in learning opportunities increased, but as the volume of negative change continued to increase, enrollment once again diminishes. The self-report data also revealed a curvilinear relationship, but it appears to be curved in the opposite direction of the prediction. Participants reported that they did not believe the situation was preparing them for learning. They reported that at what seemed to be optimal levels of change, they felt most suppressed in their learning readiness. Therefore, the set of relationships with change were very different when using the total number of courses versus self-reported intrinsic motivation as the dependent variable.

How do we reconcile self-report data that predicts diminished learning readiness, and actual individual behavior (courses taken) showing enhanced learning readiness? If the negativity of the situation increasing makes the individual feel unable to deal with the changes, this likely triggers coping mechanisms. This was Knowles' (1975) explanation for learning readiness in his treatise on pedagogy versus andragogy. Knowles (1975) specifically cites the desire to cope with real life problems as a driver for learning readiness. This kind of coping is not subject-centered but is immediate-application centered. When a person is subject-centered, they believe that mastering a certain subject or material will benefit them overall. When they are immediate-application centered, they are seeking to solve one specific problem or one specific task without regard for the body of knowledge from which it is drawn. Knowles points out that this immediate-application centered learning is a coping mechanism. Perhaps this is why someone could report that he or she is in a stressful state (intrinsic learning) that is preventing their readiness to learn and simultaneously seek the opportunity to learn. They are not seeking subject mastery; they are ready for and seeking individual task-level learning they can use for the immediate application, as

a way of coping. Similarly, the kind of immediate-application of tasks type learning that takes place during a stressful coping situation is the result of targeted planning, not a sense of well-being (Benner, 1984). People in a positive mood do tend to process information creatively and holistically, pursuing overall mastery, while people in a negative mood tend to initiate a more detailed and analytical way of processing (Boekaerts, 1993). While experiencing negative change, the emotional desire was to detach from subject mastery, but the coping mechanism was to engage in task-level detailed information processing. This explanation for the different relationships for each dependent variable would also explain why the total change was not significantly related to self-reported learning readiness. Those who reported high levels of negative change adopted an immediate-application centered approach to satisfying their perceived learning gap, and those under positive change adopted a performance-centered approach to satisfying their perceived learning gap (Boekaerts, 1993; Bower, 1981; 1991). The motivation for doing so was different, but the result was the same. Both sets of individuals pursued more learning opportunities as they perceived more change was taking place until there was so much change that the quality of interaction with each self-appraisal was so diminished that the perception of opportunity also diminished.

Reviewing the results of the first three hypothesis together shows a possible interesting relationship. In the first conceptual representation of the relationship between change and learning readiness, I showed there would be differences in the response curves depending on the type of change experienced. This relationship can be seen in Figure 1. I did not specifically hypothesize these differential relationships, but the results imply there may be something like that taking place. The resulting curves overlaid together can be seen in Figure 9. It appears that positive change may act more effectively, and it appears that negative change may be effective over a shorter range of change. This current study did not specifically analyze or validate this kind of result. Positive and negative emotions in the context of change management act with

different intensities and over different durations (Huy, 2002; 2011; Rafferty & Griffin, 2006). These differences in response intensity and duration are also known to affect commitment and effect, which in turn are known to act on cognitive processes like learning (Roundy, 2010).

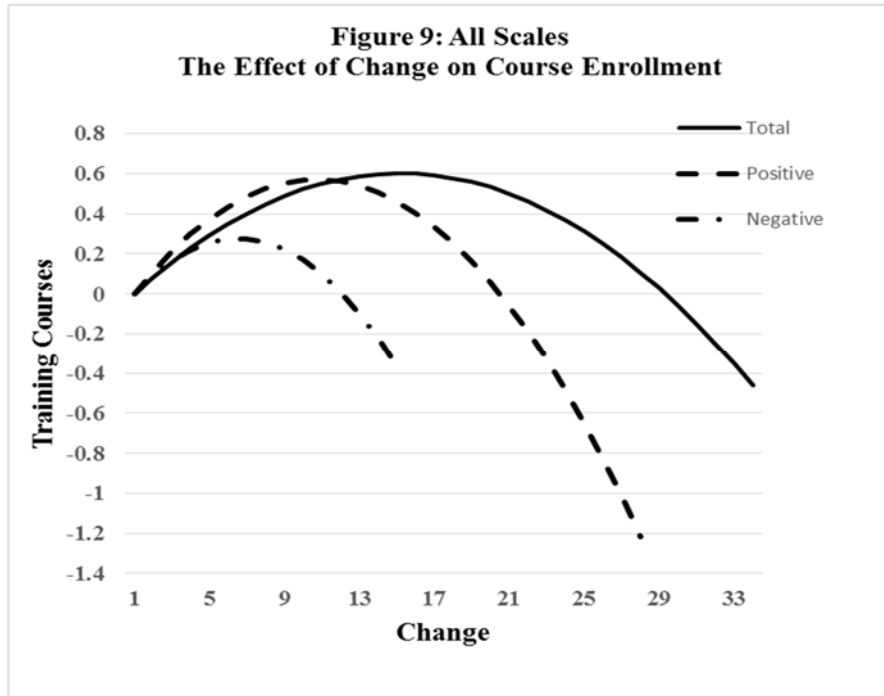


Figure 9. All scales. The effect of change on course enrollment.

Hypotheses four and five, exploring whether dispositional trust and self-negative feedback-seeking would moderate the change to learning relationship, were not supported. Based on the results, it appears that dispositional trust is related to a positive attitude toward learning, but does not play an actual role in learning readiness. Self-negative feedback-seeking was not significantly related to learning, operationalized as number of courses taken or intrinsic learning motivation. Prior research would suggest that individuals need to be vulnerable to new ideas to learn effectively (Edmondson, 1999; Knowles, 1979). After reviewing the results herein, it is possible that both these individual differences have a role in learning, but do so after learning has begun which was not measured in the present study. We know that readiness to learn indicates that a person has had the realization that they need to learn something, and that motivation to

learn is the facet that allows learning to continue even when the content gets difficult (Merriam, 2001). Dispositional trust and self-negative feedback-seeking could act in the same way as internal motivators to allow the individual to persist in a learning state even when faced with failures, setbacks, or difficulty in mastery (Knowles et al., 2005).

Boredom and anxiety also did not moderate the relationship between change and learning readiness; however, both were significantly related to change. The total negative change was significantly related to anxiety, and total positive change was significantly related to boredom. Neither of these independent variables was related to learning readiness as the dependent variable, but it is possible that these items would influence other aspects of learning, like motivation to learn discussed above (Knowles et al., 2005). Boredom and anxiety could also be two individual differences that allow some learners to overcome negative affective states in the learning environment and persist in positive learning outcomes despite negative situation appraisals (Roseman et al., 1990; Smith et al., 1993).

Practical Implications

This current research contributes to theory, showing that the amount of change experienced by employees influences learning readiness. In states of very little change, employees are unlikely to become ready to learn. This study also contributes to research by showing that in addition to positive change, negative change also positively motivates learning readiness. This appraisal context for readiness explains why too much change, even if it is all positive, suppresses learning readiness. This extension of Selye's (1956) classic study of the stress response, using appraisal theory to make application for individual learning, opens the door for similar individual stimulus-response research.

For the practitioner, this research provides a solid context in which to apply several change-management concepts. If a workplace has been stable for a long period but is forecasting a

change in the future, this concept will be important. Before employees can be expected to become ready to learn new skills to face that change, they will have to perceive they are experiencing change. If they perceive their work environment to be very stable, they will not engage sufficiently to learn. Employers should provide a clear picture of what to expect so that employees have the opportunity to appraise the need gap for themselves, thereby readying themselves for the learning opportunity. Employers can seek to provide their team members with new and novel experiences to prime their readiness to learn and be ever vigilant to protect them from excessive levels of change. The present study shows that simply asking the participants how ready they are to learn is accurate, provided that the body of recent changes are predominantly perceived as positive.

Limitations and Directions for Future Research

There were problems with several of the survey items. Two items in the dispositional trust measure did not fit well because they were reverse scored and ultimately had to be removed. Similarly, all items in the willingness to be vulnerable scale displayed poor reliability and factor structure. Thus, a similar study in which dispositional trust and willingness to be vulnerable are properly measured would allow a better exploration of the mechanisms around openness to new learning experiences.

Another potential limitation is the cross-sectional research design. To mitigate this concern, the change measure asked participants to recall the number of changes in the last six months to correspond to the timeframe for the number of courses completed. Nevertheless, the change measure relied on participants' memory and was collected after the courses were complete. A stronger design would be to measure the number of courses completed *after* the changes were experienced. Thus, the causal implications of the hypotheses whereby change influences readiness to learn does not match the postdictive research design. Nevertheless, postdictive

research designs can be useful in such situations, and the pattern of results was consistent with theory.

This research study does demonstrate that negative change can positively spur individuals' readiness to learn. Coping was offered as the theoretical reason for the negative change-learning readiness connection, but no data were collected to make that connection. It would require a more specific study to prove that coping is the tie between negative change and positive learning. Future research could be conducted by adding survey items allowing people to self-report the need for coping, or possibly by including a time-dependent aspect, allowing the study to differentiate between an immediate-application centered approach to learning, compared to a performance-centered approach. The differentiation between immediate-application learning and performance-centered learning could potentially allow a more specific interpretation of the relationship between the different curves shown in Figure 9 above.

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APPENDICES

FIELD STUDY MEASURES

Niagara Bottling Company Data Collection Proposal

Researchers:

Bryan Edwards (Ph.D., Oklahoma State University; Associate Professor and Joe Synar Chair, Department of Management)

Jim Utley (Ph.D. Candidate, Oklahoma State University)

Research description: This research project examines why different levels of change within an organization foster or suppress individual learning. It will also examine the personal traits of dispositional trust and self-negative feedback-seeking that could lead to more persistence in learning behaviors.

Benefits: By understanding the factors that motivate employees to engage in learning behaviors, managers may be able to prime more learning. Additionally, by understanding personal traits that lead to more persistence in learning despite rapid work changes, the company may be able to hire or train toward those traits.

Procedures: This research involves administering a web-based questionnaire to individual employees. We will send an e-mail invitation to all Niagara employees with an e-mail address. The questionnaires should take approximately 20 minutes to complete. Results of the surveys will be matched to company training records using employee ID Numbers. The survey questions have been used in top-ranked academic journals (see *Financial Times* rankings: <http://www.ft.com/cms/s/2/3405a512-5cbb-11e1-8f1f-00144feabdc0.html>).

Anonymity and Confidentiality Concerns: This research protocol has been approved by the Institutional Review Board at Oklahoma State University (Approval #: BU1726). To protect participants, we guarantee anonymity and confidentiality by adhering to specific procedures. The questionnaires will be recorded in a spreadsheet in which all individual identifiers (i.e., names and email addresses) will be immediately replaced with anonymous codes based on encoded employee numbers. All identifying markers will be erased. The spreadsheet will additionally be stored on a password-protected computer that can only be accessed by the researchers. Finally, results will be reported at an aggregated level, so individual results will remain unidentifiable.

To ensure that employees feel comfortable taking the survey, we will provide an information sheet that clearly indicates how participants' involvement is voluntary, anonymous and confidential. Participants will be given the investigators' contact information so that they can raise concerns any time before, during, or after the study.

PARTICIPANT INFORMATION

Oklahoma State University

Title: The Effect of Workplace Change on Individual Learning

Investigator(s): Jim Utley, Ph.D. student, Oklahoma State University and Bryan Edwards. Ph.D. Oklahoma State University

Purpose: The purpose of the research study is to understand how changes in the workplace impact individual's readiness and motivation to learn.

What to Expect: This research study is administered on-line. If you decide to participate, you will complete several questionnaires, relating to topics such as cumulative workplace change, attitudes about trust, attitudes about seeking feedback, and workplace learning and learning outcomes. All information you provide will remain anonymous.

Risks: There are no risks associated with this project beyond what is ordinarily encountered in daily life.

Benefits: You may gain an understanding of how research is conducted.

Compensation: A series of gifts / gift-cards will be raffled off to all participants. Prizes will be approved by Niagara before finalization, with values similar to: One \$500 prize, four \$250 prizes, and ten \$100 prizes.

Your Rights and Confidentiality: Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time, without penalty. If you choose to withdraw, your data can be withdrawn as long as it is identifiable.

Confidentiality: All information about you and your responses will be anonymous. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. The computer program I will use to collect the data is Qualtrics. Information collected through your participation may be published in a professional journal and/or presented at a professional meeting, etc. and if so, only aggregate data will be presented.

IRB Approval number: BU1726

Contacts: You may contact the researcher at the following address and phone number, should you desire to discuss your participation in the study and/or request information about the results of the study: Jim Utley, Dept. of Management, Spears School of business, Oklahoma State University, Stillwater, OK 74078, 405-464-7887. If you have questions about your rights as a research volunteer, you may contact Dr. Hugh Crethar, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@oksate.edu.

If you choose, you may print a copy of this consent page for your records before you begin the study.

Please, click NEXT if you choose to participate. By clicking NEXT, you are indicating that you freely and voluntarily agree to participate in this study.

Scales:

Please enter your Employee ID Number: (5 Digit Employee Code)

Frequent Change Scale. (Rafferty & Griffin, 2006)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

- 1) Change frequently occurs in my unit.
- 2) It is difficult to identify when changes start and end.
- 3) It feels like change is always happening.

Transformational Change. (Rafferty & Griffin, 2006)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

- 1) Change has significantly impacted my work unit's goals.
- 2) Change has significantly affected my work unit's structure.
- 3) Change has significantly changed the values of my work unit.

Change Stress. (Martin et al., 2005)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

- 1) In general, the change process is stressful.
- 2) In general, the change process is disruptive.
- 3) In general, the change process is difficult.
- 4) In general, the change process is upsetting.

Cumulative Change. (Edwards, n.d.)

Think back over the past 6 months and indicate which of the following items have occurred to you at work. Rate whether each item that occurred was a Positive, Neutral or Negative experience.

Rate the impact of each event has on your job:

1 Very Small 2 Small 3 Moderate 4 Large 5 Very Large

- 1) change in your opportunities for promotion
- 2) change in your pay
- 3) change in the mission of your organization
- 4) change in your position within the organization (including the hierarchy or function, division, department)
- 5) change in the physical requirements of your job
- 6) change in your opportunities for professional development
- 7) change in how your performance is evaluated

- 8) change in the union–company relationship
- 9) change in the leadership of your organization
- 10) change in your job responsibilities
- 11) change in the values of your organization
- 12) change in your supervisor
- 13) change in the technology and equipment you use to do your job
- 14) change in the support you receive from others in the workplace
- 15) change in the regulations you must follow when completing your work
- 16) change in the materials you use to do your job
- 17) change in your benefits
- 18) change in the market in which your organization operates
- 19) change in how much you work with others as part of your job
- 20) change in the training you receive to do your job
- 21) change in the products, services, content or topic of your work
- 22) change in your coworkers or team members
- 23) change in your work schedule
- 24) change in the physical environment (e.g., noise, lighting, temperature) of your workplace
- 25) change in the type of customers you serve as part of your job
- 26) change in the organizational structure of your company
- 27) change in the amount of feedback you receive on your work
- 28) change in the organization’s policies and procedures
- 29) change in your job activities
- 30) change in your work location
- 31) change in your work-related travel
- 32) change in your workload
- 33) change in the mentoring you receive

Dispositional Trust. Adapted (Mayer & Davis, 1999)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

- 1) One should be very cautious with strangers.
- 2) Most experts tell the truth about the limits of their knowledge.
- 3) Most people can be counted on to do what they say they will do.
- 4) These days, you must be alert or someone is likely to take advantage of you.
- 5) Most salespeople are honest in describing their products.
- 6) Most repair people will not overcharge people who are ignorant of their specialty.
- 7) Most people answer public opinion polls honestly.
- 8) Most adults are competent at their jobs.
- 9) *Most people are trustworthy.*
- 10) *Most people deserve to be trusted.*

Willingness to be Vulnerable. Adapted (Mayer & Davis, 1999)

Think about your need to learn new skills at work and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

- 1) If I had my way, I wouldn't let other departments have any influence over issues that are important to me. (REV)
- 2) I would be willing to let another department have complete control over my future in this company.
- 3) I really wish I had a good way to keep an eye on other departments. (REV)
- 4) I would be comfortable giving another department a task or problem which was critical to me, even if I could not monitor their actions.
- 5) *I would be willing to attempt a very difficult task first with my peers watching.*

Feedback Seeking. (Gong et al., 2017)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

Self-Negative

- 1) I often indirectly ask for information on what I failed to perform.
- 2) I often observe my supervisor or colleagues to seek negative information on my performance.
- 3) I often seek comments concerning what areas I did not do well in upon task completion.
- 4) I often ask for my supervisor's comments concerning my below-expectation performance areas.
- 5) I often seek negative comments on areas I did not perform well in during task engagement.
- 6) I often ask my colleagues for negative information to understand my performance weaknesses.

Self-Positive

- 7) I often indirectly ask information on what I performed well in.
- 8) I often pay attention to whether my job behavior is emulated by others.
- 9) I often seek information concerning what areas I performed well in upon task completion.
- 10) I often ask my supervisor for information concerning what areas I performed well in.
- 11) I often seek information on my good performance during task engagement.
- 12) I often ask my colleagues for information concerning my performance strengths.

Other-Negative

- 13) I often ask information from third parties (e.g., supervisor) regarding what colleagues failed to perform.

- 14) I often pay attention to colleagues' negative moods upon the completion of a task.
- 15) I often pay attention when colleagues are scolded by my supervisor during and after task engagement.
- 16) I often pay attention to my supervisor's negative reactions to colleagues' work.
- 17) I often pay attention to my supervisor's negative comments on colleagues' work.
- 18) I often pay attention to my supervisor's or other colleagues' criticisms of a colleague's work.

Other-Positive

- 19) I often ask information from third parties (e.g., supervisor) regarding what colleagues performed well in.
- 20) I often pay attention to colleagues' positive moods upon the completion of a task.
- 21) I often pay attention when colleagues are praised by my supervisor during and after task engagement.
- 22) I often pay attention to my supervisor's positive comments on colleagues' work.
- 23) I often pay attention to my supervisor's affirmation of colleagues' work.
- 24) I often pay attention to my supervisor's or other colleagues' discussion of a colleague's work strengths.

Informal Learning. Adapted (Noe et al., 2013)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

Learning from Oneself

- 1) In my job, I have opportunity to learn by reflecting about how to improve my performance.
- 2) In my job, I have opportunity to learn by experimenting with new ways of performing my work.
- 3) In my job, I have opportunity to learn by using trial and error strategies to learn and better perform.

Task-Based Workplace Learning. (Nikolova et al., 2014)

Think back over the past 6 months and indicate the extent to which you agree or disagree with the following statements:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

Learning through reflection

- 1) In my work, I am given the opportunity to contemplate about different work methods.
- 2) In my work, I am given the chance to think about how I can conduct my tasks more efficiently.
- 3) When confronted with difficulties in my tasks, I am given the opportunity to consider what the best possible approach is.

Learning through experimentation

- 1) In my job, I can try different work methods even if that does not deliver any useful results.
- 2) In my job, I am offered sufficient time to find out how to conduct tasks more efficiently.
- 3) In my job, I am offered sufficient time and opportunities to search for new solutions regarding task-related problems.

Learning from colleagues

- 1) My colleagues tell me if I make mistakes in my work.
- 2) My colleagues advise me if I don't know how to conduct a certain task.
- 3) My colleagues are eager to collaborate with me in finding a solution to a work problem.

Learning from supervisor

- 1) My supervisor helps me see my mistakes as a learning experience.
- 2) My supervisor is eager to think together with me how to solve a work-related problem.
- 3) My supervisor tips me on how to do my work.

Vocational Learning Measures

- 1) Have you attended training in the past 6 months? Yes / No
- 2) How many times did you attend training in the past 6 months? (0) 1, 2, 3, 4 or more
- 3) Do you intend to participate in training or self-development in the next 6 months? Yes / No
- 4) In the past 6 months, how many activities did you participate in? (0) 1, 2, 3, 4 or more
- 5) Which types of training or self-development do you intend to use? Mark all that apply.
Formal Training
Online Training
Watch Videos
Read Books, Magazines or Publications
Watch Videos
Time with a Mentor, Supervisor or Peer
Experiment with different ways of doing my job
- 6) Think about your most recent training. Why did you attend? (Multiple Choice)
I wanted to learn the topic.
I wanted to increase my skills in general.
My boss wanted me to learn the topic.
My boss wanted to increase my skills in general.
- 7) Did you find the training helpful on your job? Yes / No

Empirical: Actual employee records for number of trainings attended & type

Oklahoma State University Institutional Review Board

Date: Thursday, August 17, 2017
IRB Application No BU1726
Proposal Title: The Impact of Change on Readiness to Learn

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 8/16/2020

Principal Investigator(s):

James Utley	Bryan Edwards
	310 Business
Stillwater, OK 74078	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

- The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

- 1Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
- 2Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
- 3Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
- 4Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely



Hugh Crethar, Chair
Institutional Review Board

Table 1

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Total Change	7.64	6.66	---													
2. Total Positive Change	2.90	4.07	.75*	---												
3. Total Negative Change	1.51	2.30	.40*	-.08*	---											
4. Stressful Change	3.17	0.98	.07	-.13*	.28*	(.84)										
5. Dispositional Trust	3.18	0.48	-.05	.03	-.09*	-.07	(.79)									
6 .Willingness to be Vulnerable	2.77	0.50	.05	.05	-.02	.07	.11*	(.34)								
7. Self-negative Feedback-seeking	3.18	0.82	.08*	.03	.05	.09*	.06	.13*	(.78)							
8. Self-positive Feedback-seeking	3.20	0.86	.05	.08*	-.03	-.01	.18*	.15*	.35*	(.90)						
9. Other-negative Feedback-seeking	3.11	1.01	.10*	.06	.11*	.13*	-.04	.18*	.31*	.28*	(.91)					
10. Other-positive Feedback-seeking	3.64	0.81	.11*	.12*	.06	.05	.10*	.17*	.17*	.34*	.59*	(.91)				
11. Anxiety	1.85	0.71	.04	-.09*	.16*	.27*	-.09*	-.01	.17*	.03	.18*	-.01	(.82)			
12. Boredom	1.96	0.82	.01	-.11*	.16*	.17*	-.13*	.09*	.13*	.01	.18*	-.03	.36*	(.79)		
13. Intrinsic Learning	3.88	0.79	.08	.22*	-.18*	-.16*	.21*	.00	-.02	.05	-.03	.13*	-.24*	-.32*	(.92)	
14. Total Training Courses	.95	1.44	.11*	.10*	.04	.03	.00	-.03	.06	-.01	.06	.03	.02	-.05	.02	---

Note: N=628 to 763. Numbers in parenthesis are composite reliability scores.

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 2

Change → Learning

Hypothesis 1	Total Change → Course Participation		Total Change → Intrinsic Learning		
	B	SE	B	SE	R ²
Total Change	.085**	.024	-.007	.012	.008
(Total Change) ²	-.003**	.001	.001	.001	

Hypothesis 2	Positive Change → Course Participation		Positive Change → Intrinsic Learning		
	B	SE	B	SE	R ²
Positive Change	.117**	.031	.085**	.017	.064
(Positive Change) ²	-.006**	.002	-.003**	.001	

Hypothesis 3	Negative Change → Course Participation		Negative Change → Intrinsic Learning		
	B	SE	B	SE	R ²
Negative Change	.100**	.047	-.098**	.03	.034
(Negative Change) ²	-.009*	.005	.006*	.03	

Hypothesis 4	Total Change → Course Participation Moderated by Dispositional Trust		Total Change → Intrinsic Learning Moderated by Dispositional Trust		
	B	SE	B	SE	R ²
Dispositional Trust (DT)	-.167	.381	.694**	.147	.135
Total Change	.086**	.026	-.002	.012	
(Total Change) ²	-.003**	.001	.001	.001	
Total Change x DT	.010	.019	-.019**	.008	

Hypothesis 5	Total Change → Course Participation Moderated by Self-Negative Feedback Seeking		Total Change → Intrinsic Learning Moderated by Self-Negative Feedback Seeking		
	B	SE	B	SE	R ²
Self-Negative Feedback Seeking (SN)	-.189	.303	.047	.098	.010
Total Change	.095**	.026	-.008	.012	
(Total Change) ²	-.003**	.001	.001	.001	
Total Change x SN	.015	.012	-.003	.005	

Note: *(p<.1), **(p<.05) DT = dispositional trust SN = self-negative feedback-seeking

Table 3

Change → Learning

Check - Anxiety	Total Change → Course Participation Moderated by Anxiety		Total Change → Intrinsic Learning Moderated by Anxiety		
	B	SE	B	SE	R ²
Anxiety (AX)	.200	.374	-.441**	.088	.133
Total Change	.086**	.026	-.006	.001	
(Total Change) ²	-.003**	.001	.001	.001	
Total Change * AX	-.010	.022	.008	.006	

Check – Boredom	Total Change → Course Participation Moderated by Boredom		Total Change → Intrinsic Learning Moderated by Boredom		
	B	SE	B	SE	R ²
Boredom (BOR)	-.131	.274	-.302**	.055	.139
Total Change	.086**	.025	-.006	.012	
(Total Change) ²	-.003**	.001	.001	.000	
Total Change * BOR	-.003	.019	.000	.005	

Note: *(p<.1), **(p<.05),

VITA

James Larry Utley II

Candidate for the Degree of

Doctor of Philosophy

Dissertation: WHEN THE STUDENT IS READY, THE TEACHER WILL APPEAR:
THE IMPACT OF CHANGE ON READINESS TO LEARN

Major Field: Business Administration

Biographical:

(a) Professional Preparation

Oklahoma Christian University	Mechanical Engineering	B.S. 1994
University of Texas at Dallas	Administrative Science	M.S. 1999

(b) Appointments

2013-2017	Technical Services Director, Niagara Bottling
2011-2012	Technical Training Director, Niagara Bottling
2007-2011	Plant Manager, Letica Corporation
2006-2007	Project & Vocational Programs Director, Plastipak Packagng
2003-2005	Plant Manager & Product Program Developer, Plastipak Packaging
2000-2002	Plant Manager, Plastipak Packaging
1999	Production Manager, Plastipak Packaging
1998	Six Sigma & Training Program Manager, Reid Plastics
1996-1997	Technical Development Manager, Reid Plastics
1994-1995	Engineering Manager, Reid Plastics

(c) Publications

Kim, J., Kim Y., Wang, C. S., Aime, F., Greenbaum, R. L., & Utley, J. (July, 2017). Behaving unethically to benefit the organization: The role of team relational stability and conformity pressure. To be presented at the *2017 International Association for Conflict Management Conference*, Berlin, Germany.

(d) Synergistic Activities

1. Business Advisory Council for Oklahoma Christian University in the curriculum development subcommittee.
2. Director for the Garland, TX Economic Development Consortium.
3. Business Advisory Council for the Springfield Technical Community College in Springfield, MA.

Graduate Advisor: Bryan Edwards, Oklahoma State University