TRANSFORMATIONAL LEADERSHIP AND "FLOW": THE MEDIATING EFFECTS OF

PSYCHOLOGICAL CLIMATE

by

SARAH HERRES LINSNER

B.S., Kansas State University, 2000
M.S., Kansas State University, 2005

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Abstract

While researchers have begun to study "flow" (Csikszentmihalyi, 1975) as it applies to the workplace, little is known about the impact of leadership on followers' flow experiences. The current study examined the effect of transformational leadership on followers' experiences of flow. It was hypothesized that transformational leaders would have an indirect effect on flow through their positive influence on psychological climate. Bakker's (2008) WOLF scale was used to assess work-related flow. Results supported the hypothesis; psychological climate fully mediated the relationship between transformational leadership and flow. Transformational leaders had a strong indirect effect on all three components of work-related flow: intrinsic motivation, work enjoyment, and absorption. It was also hypothesized that each of the five climate dimensions would significantly mediate the leadership-flow relationship. The dimensions were examined simultaneously in a multiple mediator model to identify the unique contribution of each dimension. Results indicated that three dimensions were significant mediators of the leadership-flow relationship: contribution, recognition, and challenge. Because Kahn (1990) found these dimensions to be indicative of psychological meaningfulness, this study builds on other research linking transformational leadership to perceptions of meaning. While transformational leadership strongly predicted all five climate dimensions, two dimensions failed to contribute to the prediction of flow and to the overall mediating effect of climate: role clarity and supportive management. Longitudinal research is needed to validate the causal nature of the findings in this study. By conceptualizing "flow" as a specific form of momentary cognitive engagement, the present study illustrates the applicability of "flow" to the workplace. The findings of this study point to leadership behaviors and climate conditions that are conducive to flow. Managers seeking to improve employee engagement can apply these findings to the workplace.

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Approved by:

Major Professor
Dr. Clive Fullagar

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CHAPTER 1 - Introduction

The Engagement Dilemma

The notion of "employee engagement" has become a popular subject in the business world. Where job satisfaction surveys were once the measuring stick to gauge employees' motivation and contentment with their jobs, engagement surveys are now used as the tell-all indicator of motivation and productivity. The popularity of engagement surveys stems from the notion that they tap into something more substantial than what can be deduced from job satisfaction scores. Satisfied employees may be happy with their jobs, but "engaged" employees are believed to care about the success of the organization and to have the motivation needed for higher levels of effort and productivity.

Organizations are looking to employee engagement as the key to important organizational outcomes, such as productivity (Crabtree, 2004; Corporate Leadership Council, 2004), employee retention (Frank, Finnegan, & Taylor, 2004), and organizational commitment (Corporate Leadership Council, 2004). Saks (2006) explains that a common assertion is that employee engagement directly impacts employee outcomes, organizational success, and financial performance (Bates, 2004; Baumruk, 2004; Harter, Schmidt, & Hays, 2002; Richman, 2006). For example, Johnson & Johnson believe that "employee engagement is an important tool to ensure long-term growth and success" (Catteeuw, Flynn, & Vonderhorst, 2007).

Despite the popularity of employee engagement surveys, there is still widespread uncertainty and disagreement among practitioners as to what "engagement" really is (Vance, 2006), and how it differs from other well-known organizational constructs, such as job satisfaction. Organizations' definitions of employee engagement vary widely. For example,

Towers Perrin (2003) views engagement as similar to organizational citizenship behavior by describing engagement as "bringing discretionary effort to work, in the form of extra time, brainpower, and energy". Development Dimensions International (DDI) defines engagement as "the extent to which people enjoy and believe in what they do, and feel valued for doing it" (Vance, 2006). The Gallup Organization defines employee engagement as "the involvement with and enthusiasm for work" (Vance, 2006). The disparity among definitions reveals organizations' uncertainty about the true nature of "engagement".

While employee engagement is a popular topic among practitioners, a comparatively small amount of empirical research exists in the academic and organizational literature (Saks, 2006; Robinson, Perryman, & Hayday, 2004). The available body of empirical research on employee engagement is sparse and inconclusive; a review of this research uncovers a proliferation of conceptualizations and definitions of engagement that leaves one with more questions than answers (Macey & Schneider, 2008). Thus, the body of academic and organizational literature provides practitioners with little clarity on the engagement construct. In fact, the majority of the literary attention given to the topic of "employee engagement" comes from practitioner articles (Robinson et al., 2004), most of which simply assume that "engagement" is a valid and distinct construct.

In addition to the confusion surrounding the engagement construct, in general, organizational leaders and human resource professionals have limited knowledge about the factors that influence employee engagement. Unfortunately, the current body of academic literature on engagement provides them with little guidance. There is a scarcity of empirical studies that have directly examined the antecedents of employee engagement. A few noteworthy exceptions exist (May, Gilson, & Harter, 2004; Schaufeli & Bakker, 2004; Avery, McKay, &

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Wilson, 2007). However, because these and other researchers use different conceptualizations and operational definitions of engagement, it is difficult to make generalizations and draw conclusions from any studies on engagement.

The lack of research to support and validate the engagement construct causes problems for organizations. The use of engagement surveys remains a highly popular practice; however, organizations are not sure what to do with the survey results. In particular, without a good understanding of the various work factors that shape employee engagement, organizations do not know what to "fix" or improve when engagement scores are low. Because the widespread use of engagement surveys does not appear to be diminishing any time soon, organizations have an immediate need for empirical research on the antecedents of engagement. Specifically, research is needed to address the question: What are the situational factors and conditions that lead employees to engage in their work?

In particular, does leadership style have a significant effect on the degree to which employees are engaged? Because of their wide-ranging influence over many aspects of employees' jobs, leaders can play a large part in shaping the dynamics and overall conditions under which employees work. Although it is unlikely that leaders would have control over all potential drivers of engagement, particularly those factors that are determined at the organizational-level, they have influence over many of the *daily* work conditions under which employees work. Many organizations already assume that leadership is a significant driver of employee engagement (Buckingham & Coffman, 1999; Harter et al., 2002). As such, many of the items that comprise organizations' engagement surveys are intended to address work aspects that are under the influence of managers (e.g., GWA; The Gallup Organization, 1992–1999).

Furthermore, the results of employees' engagement surveys are typically given to the leaders who manage them, under the assumption that leaders will know how to improve "engagement".

Statement of Problem

Despite the assumed link between leadership and engagement, organizations know little about how leaders impact employee engagement. Unfortunately, very little, if any, empirical research has directly examined the link between specific leader behaviors and followers' level of engagement. Because of the assumed link between leadership and engagement, managers are likely to question their own style of leadership as a potential area for improvement. However, because little is known about which leadership behaviors are most likely to have a positive influence on employee engagement, leaders do not know which of their own behaviors to change. Thus, empirical research is needed to examine the influence of various leadership behaviors on the degree to which employees become engaged in their work.

Unfortunately, the engagement construct is still evolving, and discrepancy still exists about the true nature of engagement (Macey & Schneider, 2008). Consequently, the current theory on engagement is not well-defined, and does not offer an established or reliable framework with which to draw conclusions and make generalizations. In order for researchers to examine the relationship between leadership styles, as well as other work factors, and employee engagement, they need to find a reliable way to directly tap into and measure the extent to which people are "engaged".

Purpose of Study

This study suggests that a construct from the positive psychology literature called "flow" (Csikszentmihalyi, 1975) offers an alternative for exploring the work conditions related to

employee engagement. A comparison of the flow and engagement constructs suggests that flow may be conceptualized as a particular form of employee engagement. Specifically, flow represents an intense and momentary state of complete cognitive and psychological absorption or engagement in an activity. Thus, the "flow" construct may be used to represent and assess the moments at which employees are completely engaged and absorbed in their work. Unlike the engagement construct, Csikszentmihalyi's theory (1975) on the construct of flow is clearly defined and offers a framework with which to study the work conditions related to employee engagement.

The present study sought to examine the impact of leadership style on followers' flow experiences, in which "flow" represents a specific form of engagement. Specifically, the goal of this study was to investigate whether the presence of transformational leadership behaviors (Burns, 1978; Bass, 1985) is related to the likelihood that followers will experience flow. Transformational leadership has been a popular subject in academic research due the beneficial outcomes with which it has been associated; yet, no research has investigated its relationship with "flow" or "engagement". By investigating the relationship between transformational leadership and employees' flow experiences, we can learn about the types of leader behaviors that might influence employees to engage or immerse themselves in their work.

Ultimately, leaders' effectiveness at increasing the percentage of time that employees experience work-related flow will depend on their ability to create and maintain the conditions that are conducive to flow. Thus, the current study explored whether leaders who consistently engage in transformational behaviors are likely to create a psychological climate that, in turn, is conducive to flow. Specifically, the present study is based on the logic that transformational leaders are likely to shape work conditions in such a way that creates a positive and meaningful

work climate. In turn, employees will be more likely to immerse themselves in their work and, therefore, experience flow. Thus, this study sought to examine whether transformational leadership is related to followers' flow experiences and whether this relationship is mediated by the climate that the leader creates.

This study aimed to extend research on transformational leadership, flow, and engagement in several ways. First, the integration of transformational leadership theory and psychological climate theory with the theory on flow serves to increase our knowledge about the work conditions that are most conducive to flow and other forms of engagement. Second, this study presents the construct of flow as a useful tool to tap into moments where employees are engaged. Third, this study explored the impact of transformational leadership on psychological climate, as a potential mechanism by which transformational leaders may influence work-related flow. Overall, this study aimed to improve our understanding about the leadership behaviors and workplace conditions that are related to the occurrence of flow, a specific form of engagement.

Chapter Overview

First, a brief review of empirical research on engagement is provided. This review helps illustrate the issues surrounding the engagement construct and demonstrate how "flow" fits into the overall picture of employee engagement. Next, the theory of "flow" is presented, including a comparison of the conceptual similarities between flow and engagement. The current theory of "work-related flow" is then addressed. In addition, empirical studies on the antecedents of work-related flow are reviewed to illustrate the gaps in this area of research. Next, the theory of transformational leadership is discussed. No empirical research has examined the relationship between transformational leadership and flow. However, other relevant empirical research is presented that builds theoretical support for a link between transformational leadership and flow.

Next, the construct of psychological climate is addressed, followed by a summary of empirical research linking transformational leadership to climate. In addition, to illustrate how transformational leaders could create a psychological climate indicative of meaningful work, a link is established between transformational leadership and followers' perceptions of meaningful work. Finally, the climate characteristics proposed to influence flow are discussed.

Engagement

Various definitions of engagement are used by academic and organizational researchers. Schaufeli and Bakker (2004, p. 295) define engagement as a "persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior". Some researchers believe that engagement is a state of being that occurs with the simultaneous presence of vigor, dedication, and absorption (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002; Schaufeli & Bakker, 2004; Maslach, Schaufeli, & Leiter, 2001). Saks (2006) observed that engagement is often described as emotional or intellectual commitment to one's place of work (Baumruk, 2004; Richman, 2006; Shaw, 2005). While the definitions of engagement vary, most of them imply that engagement involves a persistent state of mind toward one's job that transcends work activities.

Due to the limited amount of empirical research on engagement, there has been little progress toward theory or model development. Two streams of research seem to make up the small body of empirical studies on engagement, each of which provides models and corresponding definitions (Saks, 2006). The first stream of research on engagement stems from research on job burnout (Maslach et al., 2001; Gonzalez-Roma, Schaufeli, Bakker, & Llorens, 2006; Schaufeli et al., 2002; Schaufeli & Bakker, 2004). Research on job burnout established the term "engagement" to represent the positive antithesis and conceptual opposite of job

burnout (Maslach et al., 2001). Supporting this notion, empirical studies have identified dimensions of the engagement and burnout constructs that appear to be direct opposites of each other. Maslach et al. (2001) discovered that the polar opposites of the three core components of the job burnout experience (exhaustion, cynicism, and inefficacy) are the dimensions of energy, involvement, and efficacy. As such, these polar opposites were described as "engagement". Other researchers described the polar opposites of burnout as vigor (Gonzalez-Roma et al., 2006; Schaufeli et al., 2002), dedication (Gonzalez-Roma et al., 2006; Schaufeli et al., 2002), and absorption (Schaufeli et al., 2002). Where "burnout" is an undesirable, negative experience, "engagement" is a positive and fulfilling state of mind. Maslach et al. (2001) describe burnout as "the erosion of engagement with one's job."

Saks (2006) explains that the second stream of engagement research uses the term "engagement" to reflect the extent to which employees are psychologically present in their organizational roles (Kahn, 1990, 1992; May et al., 2004). Kahn (1990) used the terms personal engagement and personal disengagement to refer to the behaviors by which people bring in or leave out their personal selves during work role performances. Employees who are personally engaged in their roles are more likely to employ and express themselves physically, cognitively, and emotionally when carrying out their roles (Kahn, 1990). Contrarily, employees who are disengaged have psychologically withdrawn from their work roles; thus, they are physically, cognitively, and/or emotionally disconnected during role performances. Although Kahn (1990) proposed a useful, comprehensive model of psychological role engagement and disengagement, the model was not empirically tested until later by May et al. (2004). May et al. (2004) found that perceptions of meaningfulness, availability, and safety were psychological conditions that

partly determined whether people would personally engage in their jobs. Aside from May et al.'s (2004) study, little research has built on Kahn's notion of engagement.

Macey and Schneider (2008) thoroughly review the academic and practitioner literature to identify the wide-ranging issues surrounding the construct of engagement. A critical issue they observed is that researchers define the core nature of the engagement construct in different ways. Specifically, some definitions describe engagement in primarily attitudinal terms, where others describe engagement as the presence of certain behaviors. Attitudinal definitions emphasize the centrality of one's thoughts, feelings, and state of mind to the construct of engagement. For example, Harter et al. (2002, p. 269) define engagement as "the individual's involvement and satisfaction with as well as enthusiasm for work." A definition by Colbert, Mount, Harter, Witt, and Barrick (2004, p. 603) describes engagement as "a high internal motivational state." In contrast, definitions that describe engagement in behavioral terms depict engagement as the presence of certain types of in-role or extra-role actions or performance. For example, Dvir, Eden, Avolio, and Shamir (2002, p. 737) define "active engagement" in behavioral terms as "high levels of activity, initiative, and responsibility."

To add to the conceptual confusion, many definitions and measurements of engagement actually resemble other constructs that are more established and well-known (Robinson et al., 2004; Macey & Schneider, 2008). Little and Little (2006) explain that researchers' definitions of engagement often resemble other well-established constructs. For example, Saks (2006) pointed out that engagement is most commonly defined in terms of one's commitment to the organization (Baumruk, 2004; Richman, 2006; Shaw, 2005) or the extent to which employees exhibit discretionary effort in their jobs (Frank et al., 2004; Towers-Perrin, 2003). These definitions resemble the constructs of organizational commitment and organizational citizenship

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behavior, respectively. Macey and Schneider (2008) state that many contemporary definitions also include job involvement as a dimension of engagement (Salanova, Agut, & Peiro, 2005; Maslach et al., 2001), while yet others insist that job satisfaction is a key dimension (Harter et al., 2002). Most definitions involve varying combinations of these constructs. For example, Harter et al. (2002) consider both job involvement and job satisfaction to be the essential factors underlying engagement. The anomalies among the existing engagement definitions are an indicator of the widespread conceptual confusion about the true nature of the engagement construct. A consensus has not yet been reached on the specific dimensions underpinning the engagement construct.

The conceptual confusion around the engagement construct is reflected in the wide disparity of tests that claim to measure "engagement". The inconsistency among available measures of engagement is a direct result of poor construct development. Sufficient research has not yet been conducted to clarify, define, and validate the engagement construct; thus, researchers' operationalizations of engagement often vary; consequently, so do the engagement measures they develop. When practitioners' use definitions of engagement that actually resemble other similar constructs, such as job satisfaction and commitment, their "engagement" surveys may be actually be assessing other constructs (Macey & Schneider, 2008).

Some measures of engagement are comprised of descriptive items that assess one's working conditions, but do not actually assess the condition of engagement itself (Macey & Schneider, 2008). For example, all of the items comprising the Gallup measure of engagement (Buckingham & Coffman, 1999; Harter et al., 2002) are descriptive in nature and assess aspects of the work environment. The presence of favorable work conditions is used to signify engagement. However, there is an absence of items that directly tap into the passion and

involvement that embody the state of engagement (Macey & Schneider, 2008). Although an assessment of work conditions can provide valuable insights into the factors that are most conducive for engagement, a complete measure of engagement should also include a direct assessment of engagement itself (Macey & Schneider, 2008). Surveys that solely rely on information about work conditions necessitate an inferential leap in order for researchers to determine engagement levels (Macey & Schneider, 2008). Because there is a lack of robust empirical evidence to validate and define the engagement construct, researchers do not know the best ways to tap into "engagement".

All of these observations have lead people to question whether the engagement movement is really just a re-packaging of already-established constructs (Macey & Schneider, 2008; Saks, 2006). At the very least, similarities between the item content in many engagement measures and job satisfaction measures indicate that confusion that exists around the true nature of engagement (Macey & Schneider, 2008). For example, Harter et al. (2002) explain that the 12-item measure of engagement used by The Gallop Organization (GWA; Buckingham & Coffman, 1999), which is widely used by organizations, accounts for a significant amount of variance in measures of overall job satisfaction, such as the Brayfield-Rothe Satisfaction Index (Brayfield & Rothe, 1951).

Macey and Schneider (2008) point out that, despite a few exceptions (May et al., 2004; Salanova et al., 2005; Schaufeli, Bakker, & Salanova, 2006), "empirical research that has appeared on the topic in refereed outlets reveals little consideration for rigorously testing the theory underlying the construct." To point out a noteworthy exception and potential model for how engagement research should be conducted, Macey and Schneider (2008) acknowledge the contributions that researchers in Spain and Holland (Schaufeli, Bakker, & Salanova, 2006) have

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made to engagement research with their rigorous development and validation of a 9-item measure of state engagement. Macey and Schneider (2008) explain that these recent studies have made noteworthy strides toward clarifying the engagement construct.

While consensus on the true nature of engagement is lacking among researchers and practitioners, there are a few commonalities among the existing definitions of engagement. One of the most noteworthy observations is the well-shared assumption that "engagement" involves more than the presence of positive attitudes towards one's job. For example, as an executive officer of The Concours Group, Erickson (2005) stated in a testimony to the U.S. Senate Committee on Health, Education, Labor, and Pensions, that "engagement is above and beyond simple satisfaction with the employment arrangement or basic loyalty to the employer – characteristics that most companies have measured for many years." Another commonly held belief is that job commitment is a fundamental component of the engagement construct (Baumruk, 2004; Shaw, 2005; Richman, 2006). However, Macey and Schneider (2008) explain that this belief may be changing with the clarity provided by more recent and robust empirical studies on engagement. Newer research suggests there should be more emphasis on the underlying dimensions of absorption, passion, and affect, and a diminished emphasis on job involvement and organizational commitment (Macey and Schneider, 2008). The conclusion of Macey and Schneider's (2008) review is that, although the research on engagement has recently progressed to become more precise and conceptually sound, much more research is needed to establish and validate a comprehensive theory of employee engagement.

"Flow"

History of Flow Construct

Csikszentmihalyi (1975), who developed and advanced the theory of "flow", was interested in studying intrinsic motivation. Intrinsic motivation is "the motivational state in which one is interested in working on a task mainly for its own sake instead of solely for the purpose of obtaining an external reward or avoiding punishment" (Zhou, 2003, p. 414). Contrarily, activities that are not intrinsically motivating often require another form of motivation (i.e., external) to entice people to engage in them. Csikszentmihalyi (1975) sought to understand why intrinsic rewards are motivating in the first place. To explore this question, Csikszentmihalyi wanted to investigate how intrinsic rewards feel when they are obtained. He suspected that the motivating power of intrinsic rewards was a function of the positive subjective experience that results from engaging certain activities (Csikszentmihalyi, 1975).

Csikszentmihalyi and colleagues interviewed over two hundred people who loved the activities in which they chose to engage and would go to great lengths to engage in them. The participants represented a wide variety of activities, and included rock climbers, painters, surgeons, writers, and musicians. Individuals were interviewed about their experiences during moments when they were immersed in enjoyable activities. This research revealed that the activities induced a common experience that respondents described as extremely pleasurable and rewarding in itself (Csikszentmihalyi, 1974, 1975). This common experience was described as a highly enjoyable peak moment, in which individuals felt at one with their activity. During these moments, irrelevant and distracting thoughts were absent from consciousness due to complete immersion in the task. Absorption in the activity was so intense that individuals' sense of time was distorted, and time seemed to pass very quickly and unnoticed.

The participants in Csikszentmihalyi's studies (1975) were doing very different things when this common experience occurred, yet they described the experience in very similar ways. Words used to describe the experience include 'ecstasy' and "being in the zone". Many individuals referred to this peak experience as 'flow', using the metaphor of a current carrying them along. As a result, Csikszentmihalyi named this effortless, enjoyable experience "flow". He defined flow as "the holistic sensation that people feel when they act with total involvement" (Csikszentmihalyi, 1975). The activities that frequently produce flow experiences, such as sports, rock-climbing, and painting, are called "flow activities".

Features of Flow Experience

Csikszentmihalyi (1988, 1996, 1999, 2003) has identified several features of the flow experience: concentration, intrinsic motivation, enjoyment, challenge/skill balance, clear goals, immediate feedback, and the perception of control. Regardless of the type of activity in which one is engaged, the flow experience tends to have these characteristics. It is important to note that some researchers refer to a few of these flow characteristics as "facilitators" of the flow experience, as they may be antecedents of the flow experience. However, it is not clear whether these features are precursors to the flow experience or are actually characteristics of the experience, itself. Because this issue is still debatable, this paper refers to all known flow characteristics as "features" of the flow experience.

Concentration

A common characteristic of the flow experience is full concentration and complete immersion in the task at hand (Csikszentmihalyi, 1990; Bakker, 2008; Ghani & Deshpande, 1994; Webster, Trevino, & Ryan, 1993). In fact, Csikszentmihalyi (1988) states that the element of concentration is probably the most universal element of the flow experience. Complete

cognitive absorption in an activity is necessary for flow to occur. Once this level of deep concentration is achieved, people are able to tune out other stimuli that are irrelevant to the task, which further improves their focus on the task. During flow, this intense level of concentration becomes effortless, and there is a merging of activity and awareness. Because people become highly absorbed in an activity while in flow, there is no room in consciousness for irrelevant and distracting thoughts; consequently, feelings of self-consciousness vanish (Csikszentmihalyi, 1975, 1988, 1990). People become so immersed in the activity that the perception of time is distorted; time seems to fly and hours feel like minutes.

Csikszentmihalyi (1975) explains that the act of investing complete attention involves the organization or mastery of one's consciousness. Consequently, the mastery of consciousness improves the quality of our experiences (Csikszentmihalyi, 1997). People are constantly bombarded with numerous stimuli that fill their consciousness with random, distracting, and often contradictory thoughts. These distracting thoughts make it difficult to focus one's attention on just one task or one aspect of the environment. Instead, one's attention is diverted to various thoughts that take over one's consciousness. This diffusion of attention makes people feel distracted. On the other hand, during flow experiences the consciousness becomes more ordered, the mind becomes clear, and all of one's attention can be focused on the immediate task (Csikszentmihalyi, 1975, 1988). This complete concentration is referred to as mastery of consciousness; it allows individuals to be cognitively and psychologically present or engaged in the moment.

Intrinsic Motivation

Flow is most likely to occur when intrinsic motivation for the activity is high (Csikszentmihalyi, 1975). Csikszentmihalyi (1997) states that, within the framework of flow

theory, intrinsic motivation is focused on specific work activities and immediate goals, such as excitement and enjoyment. Interestingly, the concept of flow helps explain why certain activities are intrinsically motivating in the first place. Essentially, the enjoyment associated with flow makes it a highly desirable state to achieve; the experience of flow is intrinsically motivating. Flow experiences are intrinsically rewarding because they permit individuals to become fully immersed in a task and to stretch their abilities toward their maximum potential (Csikszentmihalyi & Rathunde, 1993). Therefore, when flow is associated with a particular activity, the activity also becomes intrinsically motivating. Because engaging in that activity produces flow experiences, the activity essentially becomes its own reward. Thus, people who experienced flow during previous engagements with a particular activity are more likely to be intrinsically motivated to engage in that activity again.

Enjoyment

In addition to complete concentration and intrinsic motivation, the experience of enjoyment is also a key element of the flow experience (Bakker, 2008; Csikszentmihalyi, 1990; Hoffman & Novak, 1996; Trevino & Webster, 1992; Ghani and Deshpande, 1994). Csikszentmihalyi (1975) explains that enjoyment is the affective product of flow experiences. In fact, flow is described as a state of "optimal experience", because the characteristics associated with it lead to an overall, highly enjoyable experience. For example, the absence of random, distracting, and irrelevant thoughts, which is an element of the flow experience, is perceived as a pleasant experience. The loss of self-consciousness is another characteristic of the flow experience that makes it an enjoyable experience.

Challenge / Skill Balance

Csikszentmihalyi (1975, 1988, 1990) states that the universal prerequisite for optimal experience is a balance between the perceived challenges in a particular situation and the skills one possesses to address those challenges. Flow is thought to represent a state of optimal experience that falls somewhere between the two polar extreme states of boredom and stress. When skill level is significantly higher than the challenge presented in a situation, boredom is likely to occur. Conversely, when individuals face a challenging situation where their perceived skill level is significantly lower than what is needed to meet the challenge, they are likely to experience frustration, anxiety, and stress (Csikszentmihalyi, 1975). Furthermore, if both challenges and skills are perceived to be low, one begins to feel indifferent and apathetic towards their work. Ample empirical evidence for this pattern of experiences exists (Csikszentmihalyi, 1997; Edwards, 1996; Karasek, 1979; Massimini & Carli, 1988).

Csikszentmihalyi originally asserted that the match of *high* skill with *high* challenge was the most conducive condition for experiencing flow (1975, 1990, 1997). However, Csikszentmihalyi (2003) recently stated that this assertion has evolved over the years as the result of studies showing it takes above average (rather than high) challenges and skills for flow experiences to occur (Haworth & Evans, 1995; Massimini & Carli, 1988; Massimini, Csikszentmihalyi, & Carli, 1987). Furthermore, research indicates that the degree of challenge needed for the occurrence of flow is influenced by individual differences. For example, some individuals prefer their skills and challenges to be equal, while others prefer the feeling that they are in control (i.e., high skill paired with moderate challenge) (Chen, Wigand, & Nilan, 1999). Based on these findings, recent research on flow theory has emphasized a perception of compatibility or balance between challenges and skills, rather than a specific delineation of high

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challenge and high skills (Csikzentmihalyi, 1990; Massimini & Carli, 1988; Clarke & Haworth, 1994; Ellis, Voelkl, & Morris, 1994). In other words, a good balance of challenges and skills is likely to occur when individuals are challenged to utilize their skills and abilities to an optimal level, in which the "optimal level" is defined by the person.

Clear Goals

Another important characteristic of the flow experience is the presence of clear goals. Even when a person has the right skill level to meet the demands of an activity, the activity must also have clear goals (Csikszentmihalyi, 1975, 1988). Flow activities permit people to focus on clear goals that require them to respond in a specific manner (Csikszentmihalyi, 1997). Clear goals allow people to act with a purpose. Csikszentmihalyi (1997) explains that goal clarity allows people to engage in activities without questioning what needs to be done and how to do it. Questioning one's actions and methods diverts attention away from the task at hand, thereby lessening the likelihood that one will become immersed in the task. Certain games, such as chess and tennis, offer clear goals and rules of engagement, and are more conducive to flow experiences than are activities where the rules and goals are more ambiguous (Csikszentmihalyi, 1997).

Feedback

Immediate feedback is also an important characteristic of flow experiences (Csikszentmihalyi, 1975; Bakker, 2005). Flow activities not only provide clear goals, but they also provide immediate feedback about one's progress towards those goals. Feedback provides people with clues as to how well they are doing, and is a necessary condition experience flow (Csikszentmihalyi, 1975, 1988). When the feedback is instant, people can stay immersed in an activity without wondering if they are making progress and performing well. In contrast, when

individuals have to work for long periods of time without clues to indicate how they are

performing or whether their efforts are worthwhile, they are less likely to become immersed in

the moment and to experience flow. During flow experiences, people know how they are

performing.

Perception of Control

Finally, the perception of control tends to be a key feature of the flow experience

(Csikszentmihalyi, 1995; Bakker, 2005). When engaging in an activity, a person must maintain

a perception of control over the activity in order to remain in a state of flow. The perception of

control can occur when employees have a certain degree of autonomy in carrying out their work

tasks (Evans & Fischer, 1992). The self-determination (i.e., experience of choice) associated

with autonomy allows people to take psychological ownership over their work, which increases

levels of intrinsic motivation. The positive benefits of autonomy and the perception of control

have repeatedly been recognized in the literature for promoting motivation (Hackman &

Oldham, 1975; Fried & Ferris, 1987) and positive affect (Saavedra & Kwun, 2000); thus, it is not

surprising that the perception of control is related to flow.

Flow: A Form of Engagement

The current study approached the concept of "flow" as a useful construct for studying

employee engagement in its most immediate form. The term "flow" is a specific state of intense

absorption or engagement in an activity; thus, the present study conceptualized "flow" as a

specific form of engagement with one's work. A connection between the construct of employee

engagement and the construct of flow is seldom made in organizational literature. Any rare

exceptions only briefly mention flow among a longer list of other constructs that are similar to

engagement (e.g., May et al., 2004). Csiksentmihalyi (1997) titled one of his books: "Finding

Flow: The Psychology of Engagement with Everyday Life." Yet, Csiksentmihalyi's intention in writing this book was not to make a direct comparison between flow and the current, popular notion of engagement. One researcher who makes an insightful connection between the two constructs is Kahn (1990); he briefly points out that the flow and engagement constructs are similar in that they both have *self-employment underpinnings*. In other words, both constructs are dealing with the degree to which people bring aspects of themselves, either cognitively, emotionally, and/or physically, into their work roles.

To demonstrate how flow is a form of engagement, it is helpful to illustrate the differences between the two constructs. The primary difference between the flow and engagement constructs is the *type* of self-employment they represent. Because a consensus has not been reached on the exact nature of "engagement", it is difficult to pinpoint exactly how the two constructs differ on this point. However, many conceptualizations of engagement approach it as a more persistent form of self-employment than is true of the flow construct. That is, the traditional notion of engagement is described as "pervasive" (Schaufeli et al., 2002; Schaufeli & Bakker, 2004; Maslach et al., 2001) in the sense that it transcends activities. Comparatively, the self-employment associated with the flow experience is transient and tied to a particular activity.

While very few researchers have conceptualized flow as a form of engagement, a few researchers have mentioned the possibility of a more transient form of "engagement". For example, in a review of the current state of engagement research, Macey and Schneider (2008) explain that various forms or constructs of engagement actually exist. They explain that engagement can take the form of a transient psychological state, as well as a more enduring, pervasive state (Macey & Schneider, 2008). Unlike the traditional concept of engagement, the transient or momentary form of engagement varies according to aspects of an employee's current

work situation (Macey & Schneider, 2008; Kahn, 1990). This momentary form of engagement is very similar to the construct of flow.

Kahn's (1990, 1992) conceptualization of engagement also addresses engagement as a transient psychological state. His theory of engagement addresses individuals' decisions to momentarily bring themselves into their roles. Kahn (1990) explains that "people can use varying degrees of their selves, physically, cognitively, and emotionally, in the roles they perform". In addition, Kahn states that the degree to which employees are "psychologically present" and genuinely engaged in their roles will vary according to their perceptions of the work circumstances. In other words, Kahn (1990) posits that engagement will vary from situation to situation. Kahn (1990; pg. 692) investigated the work conditions "in which people personally engage, or express and employ their personal selves, and disengage, or withdraw and defend their personal selves". Kahn (1990) found that individuals vary their degree of engagement based on the degree of meaningfulness (benefits) or safety (guarantees) they perceive in situations.

Kahn (1990; 1992) uses the notion of "psychological presence" to define personal engagement. Macey and Schneider (2008) build on this concept by explaining that "psychologically presence" involves being focused, connected (i.e. absorbed), and "integrated". Employees who are "integrated" are pulling upon all of their skills and abilities at one time in order to respond to particular demands of a role. This notion of integration is very similar to flow theory's (Csikszentmihalyi, 1997) emphasis on challenge/skill balance. In fact, Kahn's (1990, 1992) notion of psychological presence fits well within the framework of flow theory, where flow represents an intense state of psychological presence brought about by a match of challenge and skill. A flow state is characterized by peak levels of focused attention and

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integration due to the deep absorption in the immediate task; therefore, psychological presence would be intensified during flow. Thus, Kahn's (1990) view that "engagement" is defined by "psychological presence" helps to illustrate the conceptual connection between flow and engagement.

A key factor that conceptually links both *forms* of engagement (i.e., flow and the traditional notion of engagement) is the underlying dimension of absorption. Flow is typically characterized as a specific momentary "peak" experience, where the level of absorption with a particular activity is so great that employees do not experience themselves as separate from the activity (Csikszentmihalyi, 1990). Concentration levels are extremely high and mental processes are deeply engaged (Csikszentmihalyi, 1997). Therefore, flow can be conceptualized as a specific form of cognitive engagement, as experienced by a peak in cognitive absorption with the activity. Absorption is also thought to be an essential component of the more enduring form of engagement (Kahn, 1990; Rothbard, 2001; Macey & Schneider, 2008). However, the more enduring form of engagement probably involves a more general level of absorption with one's role. Perhaps, the frequent occurrence of flow experiences (i.e., momentary absorption and engagement in a task) can enhance employees' overall levels of absorption and engagement with their roles (i.e., the more enduring and pervasive form of engagement). Without question, however, engagement and flow are both enjoyable states that involve absorption with one's work.

Work-related Flow

Although happiness levels are lower during work, research has demonstrated that flow actually occurs more frequently at work than in leisure settings (Csikszentmihalyi & LeFevre, 1989). A key reason for this contradiction is that challenges are often sparse during free time;

therefore, one's skills are not frequently utilized (Csikszentmihalyi & LeFevre, 1989). Thus, although passive leisure activities are often responsible for positive experiences in one's day, they usually lack sufficient mental challenge and rarely produce flow. In fact, in some passive leisure situations, such as watching television, there is a complete absence of challenging situations, deep concentration, or clear goals (Csikszentmihalyi & LeFevre, 1989). These conditions often leave people feeling bored or even anxious. Work situations, however, are much more likely to provide challenging opportunities to apply one's skills. Challenging work tasks often require the deep concentration levels that are associated with flow; thus, concentration levels tend to be higher at work. As a result, individuals' minds tend to be more engaged during work than during other daily activities. The unstructured free time in leisure activities does not allow people to organize their psychic energy, which may be due to the "inability to create challenging situations that require skilled performance" (Csikszentmihalyi & LeFevre, 1989). For these reasons, people tend to be more cognitively engaged while at work than during other daily activities.

Csikszentmihalyi (1997) points out that job-related work has a structure that is comparable to other intrinsically rewarding activities that are conducive to flow, such as sports, music, and games. For example, work has clear goals and guidelines for performance, provides feedback and challenge, and requires concentration. The deadline-oriented nature of many work tasks typically involves the presence of clear goals and guidelines. Csikszentmihalyi (1997) explains that when the dynamics of work resemble a game, in terms of having appropriate and flexible challenges, clear goals, and immediate feedback, it is experienced as enjoyable. Csikszentmihalyi (1997) contrasts these work situations to time spent at home, where people

often do not know how to spend their time, lack a clear purpose, or may perceive that their expertise and talents are underutilized.

Despite the realization that flow occurs at work, limited empirical research has focused on work-related flow until recently. Bakker (2008) has made significant contributions towards establishing a theory of work-related flow. Bakker (2008) sought to operationalize flow within the work context and to identify the components of work-related flow. Through an examination of flow research, Bakker (2008) found that three core components underpinned most research on flow: absorption, work enjoyment, and intrinsic work motivation (Csikszentmihalyi, 1997; Csikszentmihalyi & Csikszentmihalyi, 1988; Csikszentmihalyi, Rathunde & Whalen, 1993; Larson & Richards, 1994). By conducting empirical research in workplace settings, Bakker (2008) confirmed that the presence of these three components comprises the construct of work-related flow. Absorption refers to complete immersion and concentration in a work-related activity. Work enjoyment is described as very positive thoughts and feelings regarding the quality of one's work situation (Veenhoven, 1984). Bakker (2008) states that enjoyment results from one's affective and cognitive assessment of the flow experience (Diener, 2000; Diener & Diener, 1996). Intrinsic motivation refers to one's desire to engage in a specific work-related activity with the intention of experiencing the satisfaction and enjoyment inherent in the activity itself (Bakker, 2005; Deci & Ryan, 1985).

Work-related flow occurs when absorption, enjoyment, and intrinsic motivation are simultaneously experienced (Bakker, 2005). Demerouti (2006) points out that this definition implies that flow is an overarching construct, which discriminates work-related flow from other organizational constructs, such as job satisfaction. For example, job satisfaction is merely a positive and enjoyable emotional state resulting from one's evaluation of his or her job (Locke,

1976). For the same reason, the construct of flow is not identical to the construct of intrinsic

motivation (Demerouti, 2006). Thus, the construct of flow is multifaceted and involves

affective, cognitive and motivational components (Demerouti, 2006).

Antecedents of Work-related Flow

A very limited amount of research has applied Csikszentmihalyi's (1990) theory of flow

to the workplace setting. Specifically, very few studies have investigated the situational factors

that are most conducive to work-related flow.

A few empirical studies, however, have indicated that a balance between challenge and

skill is important for the onset of flow in work settings, just as it is in traditional flow activities.

For example, Demerouti (2006) found that Hackman and Oldham's (1980) notion of "skill

variety" predicted workplace flow. Skill variety occurs when employees engage in various work

tasks that require them to use a variety of their skills. Demerouti (2006) explains that skill

variety is a similar concept to challenge-skill balance; therefore, this finding provides empirical

evidence that challenging situations are an antecedent of work-related flow. Eisenberger, Jones,

Stinglhamber, Shanock, and Randall (2005) also found a link between challenge and flow, but

found that the optimal ratio of challenge to skill will vary according to an individual's need for

achievement (i.e., low or high). Fave and Massimini (1988) compared the flow experiences

among clerical workers and supervisory employees. They found that flow is more likely to occur

in supervisory jobs; the responsibility associated with supervisory jobs tends to involve elements

of challenge and autonomy, thus creating conditions that are conducive to flow. Contrarily,

clerical work tends to involve more repetition, less challenge, and little responsibility. These

studies suggest that opportunities for challenging work are important for the occurrence of work-

related flow, which is consistent with Csikszentmihalyi's (1975, 1999, 2003) flow theory.

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A number of empirical studies have suggested that the perception of control, which often occurs with a certain degree of autonomy, is a facilitator of work-related flow. Bakker (2008) found empirical evidence that autonomy is significantly related to each of the flow (Bakker, 2005; Bakker, 2008; Demerouti, 2006). This finding suggests that employees who have some autonomy and control over their work methods are more likely to experience happiness at work, to be intrinsically motivated to perform their work tasks, and to completely immerse themselves in their work. Allison and Duncan (1988) compared the flow experiences of women in professional jobs with women in blue-collar jobs. They found that blue collar workers were much less likely to experience flow at work. They attributed this finding to the lack of perceived control that blue collar workers have over their work environment. Thus, consistent with flow experiences in traditional flow activities, the perception of control also appears to be an antecedent of flow in work settings.

Aside from the findings on challenge and perceived control, we still know very little about the work conditions that are most conducive to flow. Because the work environment can be highly dynamic, a variety of job characteristics and situational factors have the potential to influence the core components of work-related flow (intrinsic motivation, absorption, and enjoyment). In fact, findings from a few studies suggest that some antecedents of work-related flow may be unique to the workplace setting; that is, they may not play a major role in non-work situations. For example Salanova et al., (2006) found that the presence of climate orientations for social support, innovation, and rules had a positive impact on the frequency of flow experiences among teachers. Bakker (2008) found that having opportunities for self-growth is related to all three components of work-related flow. Demerouti (2006) found that Hackman and Oldham's (1980) five core job characteristics (skill variety, task identify, feedback, task

significance, autonomy) are related to work-related flow. Aside from these studies, however, little is known about the work conditions that are related to flow. To our knowledge, no empirical research has examined the relationship between leadership style and followers' experiences of flow.

Summary

This paper suggests that flow can be conceptualized as a form of situational and momentary engagement. More specifically, flow can be defined as a specific form of engagement in its transient state that is highly influenced by the immediate work conditions. Because flow is a relatively well-established construct, in terms of having an empirically-derived operational definition and theoretical framework, the occurrence of flow can provide a reliable indication of engagement in its transient form.

The theory on flow offers a framework for studying aspects of the work situation that lead employees to cognitively engage and to immerse themselves in their work. This paper suggests that the study of flow can help to increase our understanding about what leaders can do to engage their followers.

Although flow researchers are starting to devote empirical attention to work-related flow (Bakker, 2008), much is left to understand about the work factors and conditions that are most conducive to flow, as well as to other forms of engagement. In particular, no empirical research has directly examined the relationship between leadership style and followers' experiences of flow. The current study sought to contribute to flow and engagement research by investigating the impact of transformational leadership behaviors on work-related flow. In other words, this study examined transformational leadership as a potential facilitator of work-related flow.

Transformational Leadership

The behaviors and decisions of leaders can influence employees' attitudes, perceptions, behaviors, motivation levels, and, most importantly, their experience of work. Leadership positions function as boundary roles in organizations (Katz & Kahn, 1978), where leaders are required to influence employee behavior in ways that facilitate the attainment of organizational goals (Fleishman, 1973). Thus, leaders often have a significant degree of control over various aspects of employees' jobs, and consequently, over the nature and quality of employees' work experiences.

Leaders impact the behavior and experiences of followers through many mechanisms, such as goal definition, role modeling, resource allocation, expression and communication of organizational norms and values, and the shaping of others' perceptions of the work environment (Bass, 1981; Bass, 1985; House & Mitchell, 1968; James & James, 1989; Van Fleet & Yukl, 1986). Amabile, Conti, Coon, Lazenby, and Herron (1996) explain that immediate supervisors, who are closer to employees' daily work than other leaders, can directly affect employees in even different ways. For example, supervisors usually determine the tasks on which employees work; the structure of those tasks; how progress is monitored; the degree of work pressure placed on employees; the degree of autonomy they are allowed in carrying out their work; the allocation and availability of necessary resources; and the types of recognition and rewards that are associated with their work (Amabile et al., 1996).

Some leaders are more likely than others to have a positive influence on employee motivation and behavior. Transformational leadership is considered to be one of the most effective and motivating styles of leadership. Thus, it seems likely that transformational leaders

would have a positive impact on followers' levels of intrinsic motivation, enjoyment, and absorption – the three components of work-related flow.

Theory of Transformational Leadership

In the first comprehensive conceptualization of transformational leadership, Burns (1978) made a distinction between transactional leaders, who primarily use exchange relationships, and transformational leaders, who have a vision and are able to inspire others. Subsequent research by Bass on transformational leadership played a significant role in the advancement and evolution of the theory (Bass, 1985, 1997, 1998; Bass & Avolio, 1993; Bass & Steidlemeier, 1999).

Bass's (1985) conceptualization of transformational leadership is based on Burn's (1978) theory; however, there are a few differences. Burns stated that the transactional and transformational leadership concepts represent opposite ends of a continuum underlying one specific construct. Contrarily, Bass (1985) contends that the two leadership styles actually represent separate constructs; thus, a leader can be both transformational and transactional at the same time. Specifically, the notion of an "augmentation effect" is used to describe the relationship between the two leadership styles, where transformational leadership actually augments or complements transactional leadership (Bass, 1985; Howell and Avolio, 1993). In fact, Bass (1999) claimed that the best leaders use a combination of the transformational and transactional styles of leadership.

Transactional leadership is based on a mutually beneficial exchange relationship between leader and follower, where the leader clearly communicates what is expected of followers and what rewards they will receive for meeting those expectations; a "this for that" transaction. Transactional leadership is characterized by three dimensions: contingent reward, management

by exception—active, and management by exception—passive. Contingent reward refers to the extent to which leaders have constructive exchanges with their employees. Management by exception refers to the extent to which leaders take corrective steps based on the state of the leader-follower transactions. Howell and Avolio (1993) explain that the primary difference between management by exception—active and management by exception—passive is the timing of leadership intervention. While passive leaders do not take corrective action until after a problem has occurred, active leaders take a proactive approach by monitoring follower actions, anticipating problematic issues, and taking action before issues cause serious problems.

In contrast, transformational leaders move beyond exchange relationships and inspire individuals to perform beyond expectations, often achieving more than they believed was possible (Bass, 1998; Bass & Riggio, 2006). Transformational leaders are able to motivate in this way by transforming the attitudes, beliefs, values, and needs of their followers, as compared to transactional leaders who primarily rely on a strategy of gaining compliance (Bass, 1985; Yukl, 1999). It is generally accepted that the transformational style of leadership is more effective than a simple reliance on constructive exchanges (transactional style), and such exchanges are considered more effective than corrective transactions or a laissez-faire style of leadership (Bass 1997; Dubinsky, Yammarino, Jolson, & Spangler, 1995).

Burns (1978) believed that transformational leaders not only recognize followers' needs, but also attempt to engage them on a deeper level by looking to satisfy their higher needs, in terms of Maslow's (1954) hierarchy. Bass (1985) maintains that transformational leaders act to stimulate or modify followers' needs, rather than "discover" them. They find ways to influence others to rise above their own self-interests for the good of the larger group. At the same time,

they support the individual development of followers by encouraging them to look for opportunities where they can take on additional responsibility (Howell and Avolio (1993).

Howell and Avolio (1993) state that transformational leaders focus attention on developing and achieving longer term goals. Thus, they create an appealing overall vision and motivate followers to pursue goals that support the vision (Conger, Kanungo, & Menon, 2001; Howell & Hall-Merenda, 1999; Judge & Bono, 2000; Jung & Avolio, 2000). Transformational leaders attempt to elevate the degree to which followers are aware and accepting of important goals.

Dimensions of Transformational Leadership

Bass's (1985) theory of transformational leadership involves four sub-dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Although researchers have developed compelling variations on this model, most have been a derivation of these four dimensions. The most common suggestion for modification is the notion that "idealized influence" and "inspirational motivation" could be combined into one factor. Regardless of which variation of the model is the most accurate, it is worthwhile to discuss each of these dimensions separately, as it helps to understand the elements underlying transformational leadership.

Idealized Influence

Bass (1985) used the term "idealized influence" to describe the charismatic quality of transformational leaders. Specifically, this dimension refers to a charismatic leader's ability to develop a vision and to influence others to accept and share that vision (Jung & Avolio, 2000). The charisma associated with the behaviors of transformational leaders ultimately leads employees to identify with their leaders, which, in turn, helps the leaders rally support for their

vision. Transformational leaders' ability to appeal to others' personal beliefs and interests on an emotional level helps them convince others to buy into their vision (Avolio & Bass, 2002; Bass, 1990, 1998; Jung & Avolio, 2000).

Idealized influence also occurs when leaders earn the respect and trust of their followers by doing the "right thing" (Avolio, 1999; Bass, 1998). For example, charismatic leaders are able to encourage followers to contemplate the moral and ethical consequences of decisions (Piccolo & Colquitt, 2006). In addition, they demonstrate conviction and commitment for the shared vision by taking stands and advocating for the group. As a result, the leaders become role models and are admired and respected by their followers (Avolio & Bass, 2002; Bass, 1998; Bass & Avolio, 1994; Arnold, Turner, Barling, Kelloway, & McKee, 2007). The followers of a charismatic leader often feel pride for their association with the leader (Bass and Avolio, 1995). Although some researchers focus more on the vision aspect of this dimension (Rafferty & Griffin, 2004), as opposed to the broader notion of charisma, most researchers seem to agree that the construct of transformational leadership has underpinnings of vision and charisma, as well as the notion of being a role model.

Inspirational Motivation

Bass (1985) refers to the third dimension of transformational leadership as "inspirational motivation". Inspirational motivation describes a leader's ability to articulate a vision in a way that is appealing to followers (Piccolo & Colquitt, 2006). Transformational leaders demonstrate confidence and optimism when communicating a vision, which builds enthusiasm among followers (Yammarino and Dubinsky, 1994). Inspirational motivation refers to a leader's ability to motivate employees around a compelling vision by displaying enthusiasm for the vision and demonstrating optimism about goal attainment (Bass, 1998). Transformational leaders are

effective in communicating important objectives in ways that people understand and can relate to (Rosenbach & Taylor, 1998). In addition, inspirational leaders establish and convey high expectations (Bass, 1998) that challenge and inspire employees to achieve more than they thought was possible. The dimensions of idealized influence and inspirational motivation are often combined to form "charismatic inspirational leadership" (Bass, 1998).

Intellectual Stimulation

Intellectual stimulation refers to a leader's ability to stimulate followers' intellectual capabilities by questioning assumptions, taking calculated risks, and seeking the input of followers. Avolio and Bass (2002) explain that transformational leaders tend to challenge assumptions and approach old problems and situations in new ways, which in turn, can stimulate followers' efforts to be creative and innovative; the leader's personal approach to problems is observed by others and is contagious. In addition, Arnold et al. (2007) point out that transformational leaders directly encourage followers to challenge accepted methods and answer their own questions when carrying out their own work. Furthermore, leaders create a supportive environment, where mistakes are not publicly criticized; thus, employees feel it is safe to try new approaches. Creativity is openly encouraged. Such leaders solicit their followers' opinions, ideas, and creative solutions to problems.

Individualized Consideration

Bass (1985) stated that leaders engage in "individualized consideration" when they display a developmental orientation towards employees. Individualized consideration refers to a leader who demonstrates individualized attention towards their followers by identifying and responding to their needs. Based on an individual's needs, a transformational leader distributes special attention regarding growth and achievement (Avolio & Bass, 2002). Transformational

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leaders acknowledge and demonstrate acceptance of employees' individual differences, in terms of needs and personal goals. Considerate leaders promote two-way communication through active listening (Avolio & Bass, 2002; Bass, 1998). The considerate leader develops employees by delegating tasks and then monitoring the situation in an unobtrusive manner, serving in a coaching role if guidance or support is needed.

More recent discussions about individualized consideration have concentrated on the notion of supportive leadership (Avolio & Bass, 1995), as compared to the broader concept of individualized attention. Supportive leaders demonstrate concern for their followers (Rafferty & Griffin, 2004). Such individual attention indicates to followers that their leader respects them and cares about their personal situations (Podsakoff et al., 1990).

Regardless of which elements are emphasized, it is clear to most researchers that the overall effect of individualized consideration, as well as the other dimensions of transformational leadership, is the empowerment of individuals (Bass, 1985; Behling & McFillen, 1996). All researchers would probably also agree that individualized consideration involves efforts to treat each employee as a valuable employee and show appreciation of their efforts and achievements (Arnold et al., 2007).

Empirical Research: Transformational Leadership and Flow

The present study is based on the logic that some leadership styles will be more effective than others at creating conditions that are conducive to flow. Transformational leadership is currently a popular subject in academic research due the beneficial outcomes with which it has been associated. Research suggests that transformational leadership has a positive effect on the experiences and behaviors of followers, which in turn, leads to outcomes that are beneficial for the individual and the organization. Despite the popularity of the transformational leadership

construct and the positive effects with which it has been associated, no research has studied the impact of transformational leadership on flow. However, theoretical support for a relationship between transformational leadership and flow can be derived from other relevant empirical research.

First, empirical research has repeatedly demonstrated that transformational leaders have a positive and motivating effect on employees' behaviors, as well as their attitudes and perceptions towards their work (see Judge & Piccolo, 2004, for meta-analytic review). In fact, a number of positive employee outcomes have been empirically linked to transformational leadership, including performance (Dvir et al., 2002; Bass, Avolio, Jung, & Berson, 2003; Lim & Ployhart, 2004; Podsakoff, MacKensie, & Bommer, 1996), extra effort (Bass, 1985), job satisfaction (Podsakoff et al., 1996), commitment (Bycio, Hackett, & Allen, 1995), and retention (Bycio et al., 1995). Due to the wide-ranging positive effects of transformational leadership, this study proposed that transformational leaders would have a positive influence on followers' flow experiences. Second, empirical evidence suggests that transformational leaders will have a positive impact on the three components of work-related flow: intrinsic motivation, enjoyment, and absorption. In particular, a number of studies have linked transformational leadership to followers' levels of intrinsic motivation. For example, Picollo and Colquitt (2006) found that transformational leadership enhances the intrinsic motivation of followers through its positive influence on Hackman and Oldhan's (1980) five core job characteristics. In their self concept-based theory of transformational and charismatic leadership, Shamir, House, and Arthur (1993) articulate that leaders increase the intrinsic motivation of followers by linking goals and efforts to followers' valued aspects of self-concepts. Bono and Judge (2003) explain that transformational leaders help employees perceive their work goals as harmonious with their own

personal values, which makes their work goals more relevant and intrinsically motivating to them. Judge and Piccolo (2004) point out that the significance of intrinsic rewards is emphasized in both Burns's (1978) and Bass's (1985) theories of transformational leadership and also in House & Shamir's (1993) conceptualization of charismatic leadership.

In fact, the theory underlying transformational leadership (Bass, 1985) suggests that each of its four primary components has the potential to elevate followers' levels of intrinsic motivation. For example, because the charisma associated with "idealized influence" elevates employees' expectations about what they can accomplish, it is also likely to enhance the accomplishment and task orientation aspects of intrinsic motivation (Charbonneau, Barling, & Kelloway, 2001). Similarly, Kirkpatrick and Locke (1996) demonstrated that employees who have a charismatic leader are likely to perceive their work as more interesting. Charbonneau et al. (2001) found that "individualized consideration" and "intellectual-stimulation" are also related to the intrinsic motivation of followers. For example, the behaviors associated with "intellectual-stimulation" encourage employees to think innovatively and creatively in order to approach old problems in new ways. It follows then that the behaviors associated with "individualized consideration" would make employees feel that their innovative efforts and ideas were appreciated. For many people, this opportunity to apply and express themselves creatively would enhance intrinsic motivation for their work.

The impact of transformational leadership on the absorption component of work-related flow has not been directly examined by organizational researchers. However, some research suggests that the transformational style of leadership has a positive influence on followers' effort and performance levels, both of which could indicate high levels of absorption in one's work. For example, Bass (1985) states that transformational leaders provide constructive feedback to

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followers, encourage them to think creatively about problems, and motivate them to put forth extra effort, all of which should influence the degree to which followers will immerse themselves in their work. In addition, through their verbal and symbolic behaviors, transformational leaders increase followers' identification with their work unit, internalization of group values, and enjoyment in their task or role, which, in turn, act as powerful motivational forces to enhance follower performance (Bono & Judge, 2003; Shamir, Zakay, Breinin, & Popper, 1998). Furthermore, when employees are intrinsically motivated by their work, they are more likely to immerse themselves in their work to the point of complete absorption. Thus, because transformational leaders tend to have a positive influence on followers' levels of intrinsic motivation, transformational leaders should also have a positive influence on the extent to which employees become absorbed in their work.

Little research has directly measured the impact of transformational leadership on the degree of enjoyment that employees derive from carrying out their work tasks (i.e., the third component of work-related flow). However, intrinsic motivation and enjoyment are closely linked together; employees enjoy engaging in work that is intrinsically motivating to them. Thus, to the extent that transformational leaders enhance followers' levels of intrinsic motivation, they should also influence employees' enjoyment with their work.

Summary

Despite the known positive effects of transformational leadership, no research has explored the relationship between transformational leadership and subordinates' experiences of work-related flow. Due to the positive influence that transformational leaders have on employee attitudes, perceptions, and behaviors, it is likely that transformational leadership is related to

followers' flow experiences. In other words, achieving the optimal experience while at work may be more likely for employees when their leaders engage in transformation behaviors.

Climate

A leader's attitudes, actions, and decisions are likely to influence multiple aspects of the work environment at any given time. They influence multiple job characteristics. However, Griffin (1980) explains that the scope of a leader's influence is not limited to the direct manipulation of objective task characteristics. For example, leaders' actions and decisions consistently send social and informational cues to employees about various aspects of their jobs (Griffin, 1980). This information provides clues to employees about what is acceptable and expected behavior. Through their wide-ranging influence, leaders affect employees' overall perceptions of the work environment; leaders set the tone for the climate of the workplace.

This study hypothesized that leaders who engage in transformational behaviors may be particularly effective at creating positive climates which, in turn, are conducive to the occurrence of flow. In other words, transformational leaders may influence followers' flow experiences through their [leaders'] impact on climate.

Psychological Climate

Climate represents individuals' experiential descriptions of what they observe and perceive happening to them in a particular environment or organization (James & Jones, 1974; James, Joyce, & Slocum, 1988; Schneider, 2000). Climate perceptions involve employees' overall thoughts and feelings about what it is like to work at a particular organization. Climate perceptions are considered to be temporal, subjective, and subject to manipulation by leaders (Dennison, 1996). Theoretically, climate has been described as a gestalt or abstraction of the environment, meaning that it can not simply be described by the sum of the environmental

factors (Schneider, Bowen, Ehrhart, & Holcombe, 2000). The patterns of events and observations that are experienced and reported are the foundation for the atmosphere or climate that people perceive.

The true nature of climate, in terms of conceptualization and measurement, has been a controversial issue. The issues of debate have primarily centered on the perceptual or individual versus the objective or organizational nature of the construct (Guion, 1973, Hellriegel & Slocum, 1974; James & Jones, 1974; Mossholder & Bedeian, 1983). In other words, the debate was over the most appropriate unit for climate research. Because perceptions are the product of individual experience, researchers have traditionally measured climate by aggregating individual measures of climate (Klein, Conn, Smith, & Sorra, 2001; Kozlowski & Klein, 2000; Rousseau, 1985). Specifically, as long as a large consensus exists among members, in terms of their climate perceptions, an average of their individual perceptions would adequately depict how the group feels as a whole.

However, some researchers have proposed that climate is actually an attribute of the environment that is formed by objective characteristics of the organization, such as the structure context of the organization (Payne and Pugh, 1976). For example, Reichers and Schneider (1990) state that climate represents perceptions of the organization related to informal or formal rewards, policies, practices, procedures, and routines. The conceptualization of climate as an objective attribute suggests that an outside person would be able to come into an organization and measure the climate based on strictly objective aspects of the organization. Therefore, according to this perspective, individual perceptions of the climate should not be taken into account. Consequently, the notion that climate is an objective property of the organization raises an issue with the traditional method of aggregating individuals' perceptions to obtain a measure

of climate. Specifically, some researchers argued that if climate is truly an organizational characteristic, then the appropriateness of aggregating individual data as a means of measuring climate is brought into question (Glick & Roberts, 1984; Roberts, Hulin, & Rousseau, 1978; Guion, 1973).

Despite considerable controversy, progress has been made in conceptualizing the climate construct (Schneider and Reichers, 1983; Koys and DeCotiis, 1991). A distinction proposed by James and Jones (1974) between "psychological climate" and "organizational climate" has gained general acceptance (Drexler, 1977; James, 1982; Powell & Butterfield, 1978; Schneider et al., 2000). The differentiation is made in terms of level of analysis. Psychological climate is studied at the individual level of analysis, and organizational climate is studied at the organizational level of analysis. At the individual level, psychological climate refers to individuals' perceptions of and the meanings they assign to their environment. As a higher level construct, organizational climate reflects beliefs about the organization's environment that are shared among members and to which members attach psychological meaning to help them make sense of their environment (James & James, 1989; James & Jones, 1974; Schneider, 1975; Schneider & Reichers, 1983). Thus, individual perceptions can be aggregated to a group or organizational level when there is agreement among them (James, 1982; Ostroff, Kinicki, & Tamkins, 2003); the aggregated data represents "organizational climate".

The prevailing status on the conceptualization of climate defines it as a multilevel construct, which involves distinct perceptions and beliefs about an organization's environment. Both the individual and organizational aspects of climate refer to employees' perceptions of their experiences within an organization. Psychological climate and organization climate represent

the individual and higher level constructs of climate, respectively. They are separate, but related constructs.

The appropriateness of using organizational versus psychological climate in research depends on the properties of the criterion variable (Glick, 1985; Parker, Baltes, Young, Huff, Altmann, Lacost, & Roberts, 2003). When the criterion variable is seen as an individual characteristic, the term psychological climate is regarded as appropriate. Conversely, when the criterion variable is viewed as a characteristic of an organization, the term organizational climate should be used. For the current study, psychological climate was the appropriate construct of choice because we are interested in employees' personal flow experiences.

Psychological climate refers to employees' perceptions and interpretations of their work environment (James, Hater, Gent, & Bruni, 1978; James & James, 1989; James, James, & Ashe, 1990). Each employee interprets their perceptions in a way that is meaningful to them, creating a psychological climate. Psychological climate can be conceptualized as an individual's cognitive representation of the work environment (Anderson & West, 1998; Ashforth, 1985; Ragazzoni, Baiardi, Zotti, Anderson, & West, 2002). This cognitive representation allows people to attribute meaning to organizational happenings and determine which behaviors would result in the best outcomes (Parker et al., 2003). Thus, psychological climate is an individual rather than an organizational attribute, measured in terms of perceptions that are psychologically meaningful to the individual rather than in terms of concrete organizational features (James et al., 1978).

Dimensions of Climate

The models of psychological climate that have been proposed by researchers vary in the number and content of dimensions. Campbell, Dunnette, Lawler, and Weick (1970) reviewed the climate research and found that six dimensions were common in all climate studies:

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autonomy; degree of imposed structure associated with a position; reward orientation; cooperativeness; consideration, and warmth and support. Subsequent studies revealed similar factors (Sims & Lafollette, 1975; Muchinsky, 1976). James and colleagues (James & James, 1989; James & McIntyre, 1981) identified four dimensions that were common across multiple work contexts: role stress and lack of harmony; job challenge and autonomy; leadership facilitation and support; and work group cooperation, friendliness, and warmth. Kopelman, Brief, and Guzzo (1990) suggested that the core of psychological climate consists of five dimensions: goal emphasis, means emphasis, reward orientation, task support, and socio-emotional support. Ostroff (1993) proposed that climate dimensions should be organized by three broader categories of the work situation: affective (related to people involvement), cognitive (related to psychological involvement), or instrumental (related to task involvement). Thus, many combinations of dimensions have been proposed by researchers as representing the underlying dimensions of the climate construct.

Although climate is a multidimensional construct, researchers have demonstrated that most of the variance in climate can be accounted for by a small number of dimensions. James and James (1989) demonstrated that a limited number of higher order dimensions can account for variation in numerous features of the organizational environment. James and colleagues (James & James, 1989; James & McIntyre, 1996) derived four second-order valuation factors (role stress and lack of harmony, job challenge and autonomy, leadership facilitation and support, and work group cooperation, friendliness, and warmth) from seventeen first-order factors. This pattern was reliable across four diverse samples. In turn, the four valuation factors loaded reliably on a single General Psychological Climate factor (PCg). PCg is described as representing the employee's global interpretation of "the degree to which the environment is personally beneficial

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versus personally detrimental (damaging or painful) to one's sense of wellbeing" (James et al., 1990, p. 53). The current study examined whether positive, beneficial climates are conducive to the occurrence of flow.

Transformational Leadership and Climate

The climate that leaders create is likely to depend upon the leadership behaviors they use most frequently. The notion that leaders impact climate is not new. For years, organizational researchers have acknowledged the significant role of leadership in shaping perceptions of climate. In fact, early climate research examined the role of leadership style in creating different climates and how these climates affected group members' attitudes and behaviors (Lewin Lippitt, & White, 1939). More recent research has demonstrated the impact of leadership and management practices on climate perceptions (Kozlowski & Doherty, 1989; Scott & Bruce, 1994; Aarons et al., 2003; Dkk & Kumar, 2003; Ekvall, 1997; Ekvall & Arvonen, 1984; Schneider & Snyder, 1975; Schneider, 1980; Schneider & Bowen, 1985; Joyce & Slocum, 1984; Fox, 1990).

According to James and James (1989), leaders are a primary source for the cues from which followers develop climate perceptions. When leaders are relatively consistent in their practices over time, a pattern of behavior emerges. These behavior patterns direct employees' attention to the leader's preferred priorities, which in turn, influences the development of climate perceptions that exemplify this priority (Dragoni, 2005).

Bandura (1986) explains that leaders influence followers' climate perceptions through a social learning process. During this process, followers frequently observe their leaders and interact with them to understand and interpret the work practices of the group. Bandura (1986) states that leaders model the behavior they believe appropriate, give feedback to followers on

whether they have met expectations, and recognize those followers who demonstrate expected behaviors. Thus, leaders' actions provide clues to employees about what is acceptable behavior, what is expected of them, and whether their work will be appreciated; thereby, shaping employees' climate perceptions. Leaders can also influence employees' climate perceptions by communicating their own assumptions and using symbolism (Ashforth, 1985). Naumann and Bennett (2000) nicely summarize this process by describing leaders as "climate engineers".

A few empirical studies have examined the impact of transformational leadership on climate. Most of these studies have examined the indirect effects of transformational leadership on follower outcomes through their impact on climate. For example, Nemanich and Keller (2007) found that transformational leaders influenced followers' job satisfaction and acquisition acceptance through the climate they created, which was characterized by goal clarity and support for creative thinking. Also, Barling, Loughlin, and Kelloway (2002) found that transformational leaders indirectly affected subordinate safety behaviors through the type of climate they created. Although a few studies have examined climate as a mechanism by which transformational leaders exert their effects, no research has examined the effects of transformational leadership on flow through climate.

Transformational Leadership and Meaningful Climate

This study proposes that the pattern of behaviors associated with transformational leadership will create a psychological climate indicative of meaningful work, which in turn, is conducive to flow experiences. A few empirical studies have provided empirical evidence for a link between transformational leadership and followers' perceptions of meaning. For example, Arnold et al. (2007) proposed that meaningful work was the mechanism by which transformational leadership affected psychological well-being. The meaning associated with

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work was measured by items assessing the extent to which work is perceived as fulfilling, rewarding, and important. Piccolo and Colquitt (2006) found that transformational leaders enhance followers' perceptions of the five core job characteristics associated with the Job Characteristics Model (Hackman & Oldham, 1980), all of which enhance perceptions of meaningful work. These two studies provide evidence that transformational leaders enhance the degree to which followers perceive their work as meaningful.

Empirical research suggests that transformational leaders may enhance followers' perceptions of meaningful work through their [leaders'] ability to link employees' work to a higher purpose. Arnold et al. (2007) point to several pieces of research that make this connection. For example, Bass (1985) explains that transformational leaders stimulate followers' higher order needs as they are outlined in Maslow's hierarchy; it is meaningful to people to work towards and meet higher order needs. Burns (1978) explains that transformational leaders seek to elevate employees' morality to levels that are more principled, leading employees to believe their work has a higher purpose. A study by Sparks and Schenk (2001) provided empirical support for the link between transformational leadership and the likelihood that employees will discover a higher purpose in their work. In their study, higher purpose was conceptualized in a general way as a purpose more important than earning money, and mediated the effect of transformational leadership on employees' job satisfaction and performance. Sarros, Tanewski, Winter, Santora, and Densten (2002) found a negative relationship between transformational leadership and the work alienation of followers. Work alienation was conceptualized as meaninglessness, in terms of not seeing how one's work contributes and adds value to the larger purpose of the organization. These studies suggest that

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transformational leaders are likely to create meaning for followers by linking their [followers']

roles to a higher purpose.

Transformational leaders are likely to frame employees' experiences in way that makes

the experiences seem more meaningful to employees. For example, Piccolo and Colquitt (2006)

suggest that transformational leaders may enhance followers' intrinsic motivation for their work

through the "management of meaning" (Salancik & Pfeffer, 1978; Smircich & Morgan, 1982).

The management of meaning involves the use of language and imagery to shape followers'

impression of the reality in which they work. By framing employees' work experiences,

transformational leaders establish a meaningful reference point that employees can use when

trying to interpret the daily happenings and situations at work (Goffman, 1974; Schutz, 1967;

Smircich & Morgan, 1982). Smircich and Morgan (1982; pg. 329) state that leaders influence

employees by "mobilizing meaning, articulating and defining what has previously remained

implicit or unsaid, by inventing images and meanings that provide a focus for new attention, and

by consolidating, confronting, or changing prevailing wisdom". Similarly, Shamir et al. (1993)

suggest that transformational leaders can use verbal persuasion and effective communication to

shape how employees judge work conditions. Thus, these pieces of research suggest that

transformational leaders are effective at framing employees' experiences in a meaningful way.

Transformational leaders help followers see congruence between their own values [the

followers'] and the leader's vision and corresponding goals (Bass, 1985; Burns, 1978; Bono &

Judge, 2003), which makes the leaders' and organizations' goals take on personal meaning for

followers. When this congruence is present, employees' work goals become more relevant and

intrinsically motivating to them (Bono & Judge, 2003). Leaders who engage in transformational

behaviors are effective at creating a vision that addresses higher order needs, such as personal

growth and self-expression (Maslow, 1954). By addressing these needs, transformational leaders create congruence between their vision and their followers' personal values. Furthermore, this congruence can increase the degree to which followers perceive their work to be self-expressive (Bono & Judge, 2003), which enhance followers' perceptions of meaning and intrinsic motivation for their work.

Summary

This study hypothesized that the positive influence of transformational leadership on followers' flow experiences is not a simple direct relationship. It was hypothesized that transformational leaders indirectly influence employees' flow experiences through the positive climate they create. In other words, transformational leaders should be effective at creating work conditions that are conducive to flow.

Due to the research linking transformational leadership to perceptions of meaning, this study proposed that leaders who consistently engage in transformational behaviors will create a meaningful climate. In other words, transformational leaders are likely to shape followers' psychological climate in a way that enhances the perceived meaningfulness of their work. In the following section, this paper makes the argument that climate and perceptions of meaning are likely to influence the occurrence of flow.

Climate and Flow

A review of the organizational literature reveals that no empirical studies have directly examined the impact of climate on flow. However, a significant body of empirical research has demonstrated the strong impact that climate has on other important individual outcomes. Empirical studies have linked employees' perceptions of their environments to individuals' work motivation (Parker et al., 2003), job satisfaction (Parker et al., 2003; Schneider & Snyder, 1975),

burnout (McIntosh, 1995), psychological well-being (Parker et al., 2003), job involvement (Parker et al., 2003; Brown & Leigh, 1996), organizational citizenship behavior (Moorman, 1991), and job performance (Pritchard & Karasick, 1973; Parker et al., 2003). In fact, perceptions of psychological climate have been found to mediate the link between organizational factors and these individual outcomes (James, Hartman, Stebbins, & Jones, 1977; Lawler, Hall, & Oldham, 1974; Litwin & Stringer, 1968; Payne & Pugh, 1974). All of this research demonstrates the strong impact that climate perceptions have on employees' attitudes and behaviors.

Climate perceptions have a significant influence on employees' behavior, because employees respond to their perceptions and interpretations of the work situation, rather than to the work situation itself (James & Jones, 1974; James et al., 1978; Campbell et al., 1970; Carr, Schmidt, Ford, & DeShon, 2003). Because people actually respond to their perceptions of an event, climate often mediates the relationships between work factors and individual outcomes (Campbell et al., 1970). Kopelman, Brief, and Guzzo (1990) explain that climate "is the psychological process that mediates the relationships between actual, objective aspects of the work environment and attitudes and behaviors.

Employees use their climate perceptions to make sense of their work situation. Jones and James (1979) state that "psychological climate perceptions enable an individual to interpret events, predict possible outcomes, and gauge the appropriateness of their subsequent actions." Climate perceptions provide clues to employees about what is acceptable behavior and whether their work will be appreciated, which, in turn, will influence their attitudes and behaviors.

Because employees use climate perceptions to make sense of their work experiences, climate is likely to influence employees' decisions to engage or immerse themselves in their

work. Brown and Leigh (1996) found that individuals' psychological climate perceptions influenced the amount of effort that employees would put forth when performing their work. Because employees must be immersed in their work to experience flow, this study hypothesized that climate perceptions should be a significant predictor of employees' flow experiences.

Employees are likely to use their climate perceptions to determine whether it is worthwhile to cognitively engage in their work (i.e., absorption), which is essential to the experience of flow. James and James (1989) state that a common judgment process underlies employees' work environment perceptions, where individuals assess whether the environment is beneficial or damaging to one's own job-related well-being. Employees' climate perceptions take on personal meaning from this judgment process; the degree to which the climate is beneficial or detrimental will influence the subsequent actions of employees (James et al., 1990; James & James, 1992; James & McIntyre, 1996). Thus, employees are more likely to engage in their work when they perceive the climate to be favorable or beneficial to them in some way.

The hypotheses posited in this study were based on the premise that the determination on whether it is personally worthwhile to engage in one's work, based on one's climate perceptions, is important to the onset of flow. Employees will not experience flow unless they are completely absorbed in their work. If employees decide that the climate is personally detrimental to their organizational well-being, they will be less likely to immerse themselves in their work; thus, it will be less likely that they will reach the high level of cognitive absorption that is associated with flow.

Perceptions of Meaning and Flow

This idea for this study was based on the logic that transformational leaders are likely to create a climate that is perceived as meaningful, which in turn, will increase flow. In other

words, this study hypothesized that the type of beneficial climate that would be most conducive to flow would include dimensions that are indicative of psychological meaningfulness. Little empirical research has directly examined the relationship between perceptions of meaning and flow. However, Csikszentmihalyi (1999) has acknowledged that people must be completely involved in something that is personally meaningful in order for flow to occur.

This paper will present theoretical evidence to make the case that perceptions of meaning are related to the occurrence of flow. First, meaningful work is linked to intrinsic motivation, which is a primary component of work-related flow. Second, research by Kahn (1990) identified perceptions of meaning as a psychological condition that motivates individuals to momentarily engage in their work. Because flow is a form of momentary engagement, Kahn's (1990) work was particularly relevant to this study.

Intrinsic Motivation and Meaning

Despite a lack of empirical research to link the constructs of meaning and flow, one can theoretically explain how they might be related based on their association with intrinsic motivation. Specifically, perceptions of meaning have been linked to intrinsic motivation, which is an important component of work-related flow. For example, Arnold et al. (2007) conceptualize "meaningful work" as having a purpose in work that is above and beyond the extrinsic purposes of work. Hackman and Oldham (1980) explain that the core job characteristics in their model enhance intrinsic motivation because they create meaning in one's work. Similarly, the results of a path analysis study by Johns, Xie, and Fang (1992) suggest that the effects of intrinsic motivation are caused by numerous characteristics, especially those that create a sense of meaningfulness in one's work. Thus, the opportunity to derive meaning from one's work is intrinsically motivating to employees. Because intrinsic motivation for one's work

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is an essential element of the flow experience (Csikszentmihalyi, 1990), the perception of meaning is likely to be related to flow. In addition, when work is perceived as meaningful, and thus, intrinsically motivating, people will be more likely to immerse themselves in their work; thereby, increasing the levels of absorption in their work, which is another primary component of work-related flow.

Kahn's Research

Additional support for a relationship between meaning and flow is provided by research linking meaning to engagement. Ethnographic research conducted by Kahn (1990) provides empirical evidence that the perception of meaningful work is a precursor to employee engagement. Kahn (1990) sought to identify the psychological conditions, or momentary circumstances, that motivate people to personally engage in their work. His premise was that people would personally engage in moments of task behaviors if certain favorable conditions were present.

Kahn (1990) used the term "personal engagement" to refer to the self-in-role behaviors by which people bring in aspects of themselves during role performances. His premise was that "people employ and express or withdraw and defend their preferred selves on the basis of their psychological experiences of self-in-role" (Kahn, 1990; pg. 702). Kahn (1990) used his research to create a theoretical framework that explains these "self-in-role" processes. Thus, Kahn's (1990) work identifies the kind of work perceptions and environmental circumstances that motivate people to engage in moments of task behavior. Because flow is a type of engagement, this study hypothesized that the same perceptions that lead to Kahn's (1990) notion of "engagement" will also lead to flow.

The findings from Kahn's (1990) research suggest that employees are more likely to engage in their work when they perceive their work situations to be psychologically meaningful and psychologically safe. Kahn (1990) referred to perceptions of meaningfulness and safety as "psychological conditions". Kahn (1990) found that when the work situation was conducive to these two psychological conditions, people were more likely to engage in their work.

The psychological condition he called "psychological meaningfulness" represents employees' beliefs that they are receiving something of personal value in return for the energy they invest in their work. The energy invested could be physical, emotional, or cognitive. Kahn (1990) found that the experience of psychological meaningfulness was more likely to occur while doing work that was challenging, clearly defined, somewhat autonomous, and varied. In addition, Kahn (1990) found that meaningfulness was experienced when people felt worthwhile, valuable, and useful. As Kahn points out, his conclusions about psychological meaningfulness are similar to Hackman and Oldham's (1980) findings that motivating job factors, such as autonomy and skill variety, serve as a source of meaning in one's work.

Kahn (1990) found that perceptions of "psychological safety" accompanied perceptions of meaning in situations where employees decided to personally engage in their work. People experienced "psychological safety" when they felt they could employ and express their selves "without fear of negative consequences to self-image, status, or career" (Kahn, 1990; pg. 708). Perceptions of safety occurred in situations where individuals felt assured that they would not suffer in some way for showing aspects of their selves during engagement. Kahn (1990) discovered that situations characterized by trust and safety were consistent, clear, and predictable. In situations that were perceived as psychologically safe, the boundaries between what was acceptable and not acceptable were clear. In addition, the potential consequences of

certain actions were clearly understood, which could help to clarify expectations and eliminate uncertainty. Kahn (1990) found that the perception of psychological safety made it less risky for people to completely engage in their work. Contrarily, situations were considered too unsafe or risky when they were perceived as threatening, ambiguous, unpredictable, or inconsistent (Kahn, 1990). In these unsafe situations, employees were hesitant to completely engage aspects of their selves in their work, cognitively, emotionally, or otherwise.

This study suggests that Kahn's research is particularly relevant to this study, because "psychological climate" is very similar to Kahn's notion of "psychological condition", and "flow" is very similar to Kahn's notion of "personal engagement". The primary focus of Kahn's research was to identify the psychological conditions that lead people to momentarily bring themselves into their roles, which should apply to the construct of "flow" and to Kahn's notion of "personal engagement". Thus, this study hypothesized that a climate characterized by psychological meaningfulness and psychological safety should be related to flow.

Conceptualization of a Meaningful Psychological Climate

The current study hypothesized that a psychological climate characterized by meaningful work is conducive to flow. For the purpose of the study, "meaning" was operationally defined as the perception that engaging in one's work will be personally beneficial in a way that goes beyond the extrinsic rewards associated with the work. This definition is similar to Arnold et al.'s (2007; pg. 175) definition of meaningful work, which defines it as "finding a purpose in work that is greater than the extrinsic outcomes of the work".

Recently, some organizational scholars have advocated for a distinction between broad and specific climates. This distinction is an issue of "bandwidth", which means that the breadth of the criterion of interest should determine the breadth of the predictor variable (Cronbach and

Gleser, 1965). Recently, Schneider (2000) emphasized this point and stated that climate can vary according to band-width; thus, climate type should be consistent with the outcome of interest. For example, researchers interested in outcomes that are more pointed or specific should assess narrower perceptions of climate (Carr et al., 2003). Contrarily, when the primary outcome of interest is broad or general in nature, such as job performance, researchers should assess molar perceptions of climate. Molar climates, sometimes referred to as global climates, reflect more general environmental perceptions. Because this study posited a relationship between flow and perceived meaningfulness, and because multiple aspects of the environment were presumed to contribute to a determination of "meaningful", the measurement of a molar climate was most appropriate this study.

The current study hypothesized that psychological safety is a necessary component of a meaningful climate. In other words, an individual's psychological climate needs to include perceptions of meaning and safety in order for the overall climate to be perceived as "meaningful". Thus, motivating climate characteristics, such as challenge and autonomy, are only meaningful when the organizational environment also provides a safe and supportive environment in which to work. In this study, the decision to involve elements of safety in the conceptualization of a meaningful climate was based on Kahn's (1990) findings that perceptions of safety should accompany perceptions of meaning in order for employees to completely engage in their work.

Brown and Leigh's Psychological Climate Scale

A "meaningful psychological climate" was conceptualized according to Brown and Leigh's (1996) operationalization of psychological climate. They created climate dimensions to align with Kahn's (1990) findings on the psychological conditions that motivate people to

engage in their work. Specifically, Brown and Leigh (1996) state that each of the dimensions serves as an indicator of how psychologically meaningful and safe the environment is. The dimensions reflect the environmental factors that Kahn (1990) found to enhance perceptions of meaning and safety. Kahn (1990) found that the presence or absence of these environmental or climate factors influenced whether employees would completely engage in their work or psychologically detach themselves from it. Specifically, perceptions of psychological safety are enhanced by climate dimensions of supportive management, role clarity, and self-expression. Perceptions of psychological meaningfulness are heightened by the climate dimensions of challenge, contribution, and recognition.

Because "self-expression", as it is defined by Brown and Leigh (1996), was not expected to have a significant impact on flow, it was left out of the study. Thus, this study focused on five climate dimensions: supportive management, clarity, perceived contribution, recognition, and challenge. A meaningful climate was conceptualized as one that possesses all five of these attributes.

Summary

The premise of this study was that leaders who consistently engage in transformational behaviors are likely to create a climate with meaningful attributes which, in turn, should be conducive to the occurrence of flow. A meaningful climate signals to employees that it would be personally worthwhile for them to engage in their work, in terms of gaining benefits that go beyond the extrinsic rewards of their work. In addition, perceptions of a meaningful climate indicate to employees that they have a safe and supportive environment in which to work. This study defined a "meaningful climate" as one that is characterized by supportive management, clarity, perceived contribution, recognition, and challenge. This study posited that employees

would become more absorbed in their work, and, therefore, would be more likely to experience flow, when these climate characteristics were present.

Proposed Model

The current study specifies a model of how transformational leadership influences followers' flow experiences. Specifically, the model proposes an indirect relationship between transformational leadership and flow through climate. Because flow is a personal experience of the individual, it was more important to examine the influence of one's psychological climate, rather than the shared perceptions of the environment (organizational climate). The proposed model will add to the body of literature on transformational leadership, psychological climate, flow, and engagement.

Overall Effect of Transformational Leadership

Because leaders have such a large impact over multiple aspects of the environment, this study hypothesized that leadership behaviors are related to the occurrence of work-related flow. Research has shown that the presence of transformational leadership has a positive influence on employee attitudes, perceptions, and behaviors. As a result, the presence of transformational leadership has been linked to many individual outcomes, such as performance (Bass et al., 2003) and job satisfaction (Podsakoff et al., 1996). This study hypothesized that transformational leadership will also have a positive effect on the individual outcome of flow. In other words, employees are more likely to achieve the optimal experience of flow when their leaders engage in transformation behaviors.

> *Hypothesis 1: Transformational leadership is positively related to the occurrence of*
> *followers' flow experiences.*

Mediated Effects

The proposed model hypothesized that the positive relationship between transformational leadership and followers' flow experiences is not a simple direct relationship. Specifically, it was hypothesized that leaders who consistently engage in transformational behaviors will create a meaningful psychological climate, which in turn, will influence the likelihood that followers will experience flow (see Figure 1). In other words, it was hypothesized that the relationship between transformational leadership and flow is mediated by psychological climate. The current study answered Yukl's (1999) call for an investigation of potential mediators of the relationship between leadership and various outcomes.

No empirical models on the relationship between leadership and flow currently exist in the literature. However, other studies testing the effects of transformational leadership on individual outcomes have found that partially mediated models best explain the relationships. In other words, these models included both direct and indirect paths. For example, Arnold et al. (2007) found that transformational leaders had both direct and indirect effects on the psychological well-being of employees. Piccolo & Colquitt (2006) found that transformational leadership influenced followers' performance and citizenship behaviors both directly and also indirectly through their influence on core job characteristics. Nemanich & Keller (2007) found that, in addition to the direct effect that transformational leaders have on followers' job satisfaction levels, they also indirectly influenced job satisfaction by creating a climate that supports creative thinking and goal clarity.

These studies suggest that partial mediation models better explain the effects of transformational leadership than do models specifying complete mediation of transformational

effects. Therefore, the current study compared a partially mediated model with a fully mediated model to determine which one provided a better fit to the data. Regardless of whether partial or full mediation explains the data better, the current study hypothesized that transformational leaders would have a significant indirect effect on flow through their effect on psychological climate.

> *Hypothesis 2: Psychological climate mediates the relationship between transformational leadership and followers' flow experiences.*

Figure 1 Proposed Mediated Model
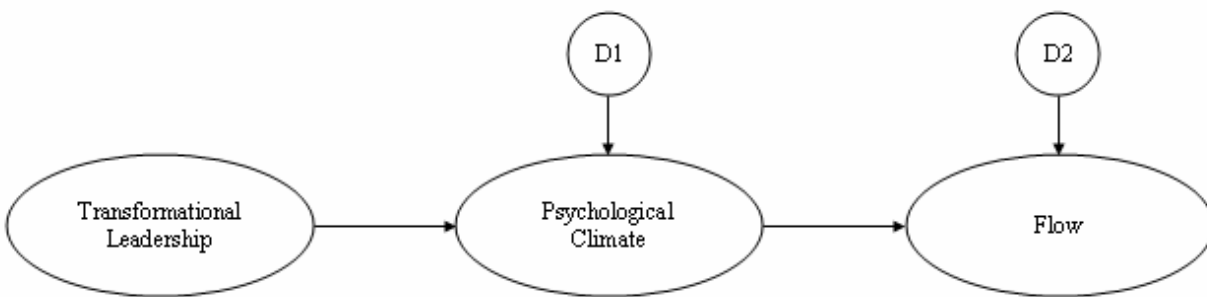
Hypothesized Specific Paths

The present study proposed that transformational leaders create a meaningful climate that is conducive to flow. Specifically, it was hypothesized that transformational leaders enhance followers' perceptions of meaningful work through their influence on five dimensions of climate: contribution, recognition, challenge, role clarity, and supportive management. In turn, it was expected that each of these dimensions would make a significant and unique contribution to the prediction of flow and the mediating effect of overall climate.

Contribution

   Although there is not much research on the relationship between transformational leadership and follower perceptions of contribution, a study by Piccolo and Colquitt (2007) found that transformational leaders have a positive effect on followers' perceptions of significance (Hackman & Oldham, 1980). Hackman and Oldham (1980) used the term "significance" to describe employees' perception that their role-related performance is important, in terms of contributing and adding value to broader organizational goals. Thus, the job characteristic of "significance" and the climate dimension of "contribution" evoke similar perceptions about one's job. Transformational leaders inspire employees by establishing and conveying high expectations (Bass, 1998), and then they challenge followers to achieve more than they thought was possible. By communicating high expectations, transformational leaders are likely to make employees feel that they have something of value to contribute. If they are consistent in doing so, transformational leaders are likely to create a positive psychological climate, in which employees believe that their work is important to the organization.

   Although a climate for contribution has not yet been linked to flow, research suggests that perceptions of contribution might enhance the meaning one derives from their work. In turn, perceptions of meaning are likely to influence flow. Kahn (1990) found that lack of meaningfulness was related to employees' perception that little was expected of them at work, and there was little they could contribute to the organization's goals. Kahn (1990, pg. 704) found that individuals experienced meaningfulness "when they felt worthwhile, useful, and valuable - as though they made a difference and were not taken for granted". Brown and Leigh (1996) used the term "contribution" to describe a work climate where one feels useful in this way. Kahn (1990) explains that feelings of significance and contribution are meaningful because

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they satisfy personal needs (Alderfer, 1972; Maslow, 1954) to have meaning and purpose in one's life. When employees perceive that the organization accommodates their psychological needs in the workplace, they are likely to respond by investing time and energy in their work (Kahn, 1990; Pfeffer, 1994; Hackman & Oldham, 1980). For the above reasons, feelings of contribution should enhance the perceived meaningfulness of one's work, which should increase task motivation, task absorption, and the likelihood that employees will experience flow. Conversely, if employees believe their work efforts are not important to the organization, they will be less motivated to devote complete attention to their work, making the occurrence of flow less likely.

>*Hypothesis 3a: A climate characterized by contribution mediates the relationship*
>
>*between transformational leadership behaviors and flow.*

Recognition

Employees' beliefs that their work efforts are recognized and appreciated are likely to enhance their perceptions that their work is meaningful (Brown and Leigh, 1996). Recognition is meaningful because it indicates to employees a sense of task identity; it signals that the work they do for the organization is identifiable and important (Hackman and Oldham, 1975). Recognition validates and acknowledges the work that employees do, making their work seem meaningful. Furthermore, climate perceptions that promote the importance of recognition should signal to employees that future work they do will be also be appreciated; therefore, making their work more meaningful to them.

The relationship between recognition and work-related flow has not yet been examined by organizational researchers. However, theoretical arguments and relevant empirical research

can provide indirect support for this relationship. Specifically, employees must be putting forth effort and be absorbed in their work before they will experience the deep concentration associated with flow; empirical research suggests that recognition is an important work factor in motivating employees to put forth this kind of effort. For example, Kahn (1990) explains that when individuals believe their hard work will be recognized, they will identify with their roles and become more personally involved. Brown and Leigh (1996) found that recognition contributes to a climate that promotes job involvement, which, in turn is related to effort. Furthermore, recognition is a type of feedback, which is an important facilitator of the flow experience (Csikszentmihalyi, 1975, 1988; Bakker, 2005). In fact, a study by Demerouti (2006) suggests that feedback is important for the onset of flow in workplace settings. Furthermore, Hackman and Oldham (1975) suggest that feedback is a motivating job characteristic due to the meaning it creates. Because recognition, in its various forms, is meaningful to employees, it should increase the likelihood that employees will put forth effort and become absorbed in their work. Conversely, if employees believe that their work efforts will not be recognized and appreciated, they will be less motivated to put forth effort, making the occurrence of flow less likely.

Leaders are primary sources of recognition, and this study proposes that transformational leaders will be particularly effective and consistent in recognizing their employees. Although little research has linked transformational leadership to recognition, behaviors associated with "individualized consideration" are likely to create, in employees, a sense that their work efforts are recognized and important. For example, transformational leaders identify and respond to employees' needs, distribute special attention regarding growth and achievement (Avolio & Bass, 2002), and promote two-way communication through active listening (Avolio & Bass,

2002; Bass, 1998). All of these behaviors are types of feedback and recognition, showing employees that their skills and contributions are important.

Thus, by providing attention, feedback, and recognition to their followers, transformational leaders should be effective at establishing conditions that are conducive to flow. Specifically, because transformational leaders are likely to be consistent in these behaviors, this study hypothesized that they will create a climate that promotes the importance of recognition. In turn, a climate that promotes recognition was expected to increase the likelihood that followers would immerse themselves in their work and experience flow.

Hypothesis 3b: A climate that promotes recognition mediates the relationship between transformational leadership behaviors and flow.

Challenge

Challenge has been identified by flow researchers as a facilitator of the flow experience. Specifically, researchers generally agree that flow experiences are more likely to occur when individuals perceive compatibility between the challenge inherent in a task and their own skills to deal with the challenge (Csikzentmihalyi, 1975, 1990; Massimini & Carli, 1988; Clarke & Haworth, 1994; Ellis et al., 1994).

Leaders have some degree of control over the match between challenge and skill. Although job descriptions play a large part in determining the degree of challenge that is inherent in employees' jobs, leaders can do a number of things to ensure there is a good match between employees' skill levels and available opportunities to use those skills. Transformational leaders may be particularly good at ensuring that employees' job demands complement their professional skills (Bakker, 2005). Although little, if any, empirical research has examined this

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link, a study by Piccolo and Colquitt (2006) found that transformational leaders influence the "variety" component of Hackman and Oldham's (1980) Job Characteristic Model. This finding suggests that transformational leaders influence the degree to which employees have opportunities to utilize a variety of their skills at work. To the degree that transformational leaders can influence the amount of challenge in employees' jobs, they can influence followers' experiences of flow.

The component of transformational leadership called "individualized consideration" represents behaviors that make would make transformational leaders particularly good at recognizing and correcting an imbalance between challenge and skills. Bass (1985) explains that "individualized consideration" describes leaders who take a developmental approach with their employees and make an effort to show individualized attention to each of their employees. Thus, transformational leaders are good at recognizing and responding to their followers' developmental needs (Bass, 1985; Rafferty & Griffin, 2004; Avolio & Bass, 2002) and distributing special attention regarding growth and achievement (Avolio & Bass, 2002). Consequently, transformational leaders should be particularly good at recognizing when followers are experiencing a mismatch between challenge and skill.

Transformational leaders are likely to take proactive steps to remedy a mismatch between skill and challenge, working to place employees on that "optimal line" where skills are matched with an appropriate amount of challenge. For example, Bass (1985) states that "individualized consideration" includes behaviors such as empowerment and delegation, both of which are useful mechanisms by which transformational leaders could create additional challenge. Another way they can create challenge is by creating challenging goals around the required work that

employees are already doing or adding more autonomy to employees' jobs. In fact, Piccolo and Colquitt (2007) found transformational leaders enhance employees' perceptions of autonomy.

Through their impact on the level of challenge that employees perceive in their jobs, transformational leaders should influence the likelihood that followers will experience flow. This study proposed that leaders who consistently engage in transformational behaviors create a climate that is characterized by challenging work. In turn, climate perceptions of challenging work were expected to have a positive impact on the occurrence work-related flow.

Hypothesis 3c: A climate characterized by challenging work mediates the relationship between transformational leadership behaviors and flow.

Role Clarity

Flow researchers have pointed to the importance of goal clarity (Csikszentmihalyi 1997, Shin, 2006), which is one element of role clarity. Csikszentmihalyi (1997) explains that clarity allows people to engage in activities without questioning what needs to be done and how they should go about it. In other words, clarity brings about perceptions of psychological safety, such that people know what is expected of them. As such, they feel they can completely immerse themselves in their work without having to question every step. Consistently having to question one's actions will divert attention away from the task at hand, thereby lessening the likelihood that one will become immersed in the task and experience flow (Csikszentmihalyi, 1997). When employees are not sure what is acceptable behavior and what is expected of them in their roles, they will be more cautious in immersing themselves in their tasks; thereby, the experience of flow will be less likely.

Role clarity tends to illicit a sense of psychological safety, which should lead employees to engage in their work (Kahn, 1990). Brown and Leigh (1996) explain that unclear or unpredictable work expectations and situations will tend to undermine perceptions of psychological safety, which, in turn will result in lower job involvement. For example, Kahn (1990) explains that frequent uncertainty and inconsistency makes it difficult for individuals to trust any autonomy assigned to them in task assignments. Contrarily, clear and predictable expectations and work norms create a psychologically safe environment, which increases involvement (House & Rizzo, 1972; Kahn, 1990). Because flow is associated with deep task involvement, this study hypothesized that role clarity will be related to flow.

This study proposed that transformational leaders will be effective at communicating information and expectations in a way that creates a safe and predictable climate. The behaviors associated with "inspirational motivation" should make transformational leaders particularly effective at communicating organizational goals to their followers in a way that is both clarifying and motivating. Rosenbach & Taylor (1998) explain that transformational leaders explain important objectives in ways that people can understand and relate to. They should be effective in helping employees understand how their roles, performance expectations, and individual goals align with and contribute to the larger vision and goals of the organization. By consistently engaging in role-clarifying behaviors, transformational leaders should help create a climate that is conducive to task absorption and flow.

Hypothesis 3d: A climate that emphasizes role clarification mediates the relationship between transformational leadership behaviors and flow.

Supportive Management

The supportive management dimension of climate, as defined by Brown and Leigh (1996), is indicative of followers' perceptions of autonomy and control. This dimension encompasses employees' perceptions that their leaders are flexible, in terms of allowing employees control or autonomy over certain aspects of their work. Valas & Sovik (1994) state that autonomy-supporting leaders actually encourage followers to approach work issues in their own ways. Thus, flexible leaders who consistently grant autonomy to their followers are likely to enhance follower perceptions of control, which is an important component of flow.

In addition to perceptions of autonomy, a climate characterized by supportive management also elicits perceptions of safety (Kahn, 1990; Brown & Leigh, 1996). In fact, perceptions of autonomy are closely related to psychological safety. Individuals feel safer when their managers grant them some control over their work (Kahn, 1990). For example, leaders' reluctance to give followers control over some aspects of their work conveys a message that employees should not be trusted and should fear stepping outside the boundaries (Kahn, 1990). In addition, without feelings of safety, it is difficult for employees to trust the control or autonomy given to them by their managers. For example, if managers verbally grant employees autonomy in deciding how to carry out their work, but then reprimand them every time they make a decision on their own, employees will not feel that it is truly "safe" to make autonomous decisions. Instead, employees will perceive a climate that is unpredictable, rigid, and unsafe.

This study proposed that flexible and safe climates are conducive to flow because employees will feel it is safe to completely engage and immerse themselves in their work. Contrarily, in rigid and unpredictable environments, a portion of employees' attention will

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always be reserved for self-monitoring to ensure that they do not overstep boundaries. Consequently, they will be unable to focus all of their attention on the work itself, which is necessary for flow to occur. As such, this study proposed that supportive, flexible environments are more conducive to flow experiences than are rigid, micromanaging environments.

Research suggests that transformational leaders are likely to create supportive and flexible climates, as indicated by perceptions of autonomy and control. For example, transformational leadership theory maintains that followers of transformational leaders are likely to perceive high amount of autonomy and self-determination (Burns, 1978; Bass, 1985). Piccolo and Colquitt (2006) point out that transformational leader behaviors characterized by intellectual stimulation, such as seeking different perspectives and new work processes, may have a positive influence on followers' perceptions of autonomy. Transformational leaders empower individuals to experiment with different methods of accomplishing their work, inviting creative and innovative ideas and solutions (Bass, 1985). In addition, leadership behaviors associated with individualized consideration, such as coaching and providing developmental opportunities, are likely to have a positive impact on followers' perceptions of both feedback and autonomy in their work (Piccolo & Colquitt, 2006).

Because transformational leaders have a positive influence on perceptions of autonomy, they are likely to enhance followers' perception of control, which is essential to the experience of flow. Furthermore, leaders who consistently engage in transformational behaviors are likely to create a supportive and flexible climate that is conducive to employee engagement and flow.

Hypothesis 3e: A climate characterized by supportive management mediate the

relationship between transformational leadership and flow.

Summary of Hypotheses

The purpose of this study was to examine the effects of transformational leadership on followers' experiences of flow, both directly and indirectly through climate. Accordingly, the following hypotheses were proposed:

1. Transformational leadership will be positively related to the occurrence of followers' flow experiences.

2. Overall psychological climate will mediate the relationship between transformational leadership and followers' flow experiences.

3. Each dimension of psychological climate will mediate the relationship between transformational leadership and flow.

    a. A climate characterized by contribution will mediate the relationship between transformational leadership behaviors and flow.

    b. A climate that promotes recognition will mediate the relationship between transformational leadership behaviors and flow.

    c. A climate characterized by challenging work will mediate the relationship between transformational leadership behaviors and flow.

    d. A climate that emphasizes role clarification will mediate the relationship between transformational leadership behaviors and flow.

    e. A climate characterized by supportive management will mediate the relationship between transformational leadership and flow.

CHAPTER 2 - Method

Participants

The sample included a diverse range of job types from various industries. The participants were employed in several industries, including education, manufacturing, retail, finance, accounting, real estate, health care, government, engineering, IT, and consulting. With this diversity, the results may be generalized to various types of roles. Participants were limited to full-time employees who reported to a manager. Part-time jobs often have different characteristics than full-time positions; thus, the inclusion of these jobs would have made the generalizability of the results questionable. Self-employed participants were excluded from the sample as they would be unable to answer leader-related questions.

Invitations were sent via email to 3500 participants. 566 started the survey, and 540 completed the survey. Of the 540 completed cases, 50 participants were self-employed, unemployed, or part-time employees (N = 38) and demonstrated carelessness in their responses (N = 12). These 50 participants were deleted from the sample, yielding a final sample of 490 participants who completed the survey and were full-time employees. The resulting response rate was 14%. The analysis for this study involved confirmatory factor analysis. According to Hoelter (1983), when conducting confirmatory factor analysis (CFA), a minimum sample of 200 is needed, although a sample of 400 is optimal; thus, the sample size for this study was within the optimal range.

Procedure

     Participants were identified by an organization called StudyResponse that has access to a large network of employed people who voluntarily participate in online surveys. StudyResponse (Stanton & Weiss, 2002) is a nonprofit service that helps to match researchers who need samples with people willing to take surveys. When people join StudyResponse, they pledge to participate in assigned surveys; in return, their names are entered into drawings for the opportunity to win prizes. StudyResponse sent members an email that explained this study and invited them to take the survey, which was live for two weeks. One week after the initial mailing, StudyResponse sent a second mailing to all non-respondents. The survey was comprised of three scales for transformational leadership, climate, and flow.

     The individuals that choose to participate followed the link included in the invitation; the link took them to a webpage that provided a brief description of the study and a section explaining informed consent. Individuals wishing to participate in the study provided their initials. Participants were then presented with a webpage that provided the survey. Following the completion of the survey, another page debriefed the participants on the study and thanked them for their participation. StudyResponse was sent a list of the participants who completed the survey; consequently, they held drawings for prizes.

Measures

Transformational Leadership

     Transformational leadership was assessed with the seven-item Global Transformational Leadership scale (GTL; see Table 1) that was developed by Carless, Wearing, and Mann (2000). The GTL assesses seven dimensions of transformational leadership: communicates a vision, develops staff, provides support, empowers staff, is innovative, leads by example, and possesses

charisma. Because the items comprising the GTL assess a single underlying factor (Carless et al., 2000), the GTL is a used as a global measure of transformational leadership. In the current study, participants were asked to rate how often their manager engaged in certain behaviors. If they reported to more than one manager, they were asked to rate the manager with whom they interacted most frequently. The seven items were measured on a 5-point scale ranging from 1 (not at all) to 5 (frequently, if not always); a higher score indicated that one's manager frequently demonstrated transformational leadership behaviors.

Table 1 Transformational Leadership Scale

Communicates a clear and positive vision of the future vision
Treats staff as individuals, supports and encourages their development (staff development)
Gives encouragement and recognition to staff (supportive leadership)
Fosters trust, involvement and cooperation among team members (empowerment)
Encourages thinking about problems in new ways and questions assumptions (innovative thinking)
Is clear about his/her values and practices what he/she preaches (lead by example)
Instills pride and respect in others and inspires me by being highly competent (charisma)

Psychological Climate

Psychological climate was measured using Brown and Leigh's (1996) multidimensional scale (see Table 2). The original scale includes six dimensions of psychological climate. The current study, however, excluded the self-expression dimension; thus, five dimensions comprised the scale for a total of 17 items. The participants were asked to rate the strength of their agreement/disagreement with each statement (0 = strongly disagree, 7 = strongly agree). Brown and Leigh (1996) found that each dimension had adequate reliability, ranging from .70 to .85.

The six dimensions loaded onto a single second-order factor, representing overall psychological climate (1996).

Table 2 Psychological Climate Scale

Supportive Management

My boss is flexible about how I accomplish my job objectives

My boss gives me the authority to do my job as I see fit.

My boss gives me the authority to do my job as I see fit.

I'm careful in taking responsibility because my boss is often critical of new ideas. [reverse scored]

I can trust my boss to back me up on decisions I make in the field.

Role Clarity

Management makes it perfectly clear how my job is to be done.

The amount of work responsibility and effort expected in my job is clearly defined.

The norms of performance in my department are well understood and communicated.

Contribution

I feel very useful in my job.

Doing my job well really makes a difference.

I feel like a key member of the organization.

The work I do is very valuable to the organization.

Recognition

I rarely feel my work is taken for granted.

My superiors generally appreciate the way I do my job.

The organization recognizes the significance of the contributions I make.

Challenge

My job is very challenging.

It takes all my resources to achieve my work objectives.

Flow

The occurrence of flow at work was assessed with the Work-Related Flow scale (WOLF) developed by Bakker (2008). The 13-item scale assesses three dimensions: absorption, work enjoyment, and intrinsic work motivation (see Table 2). Participants were asked to report on the frequency of their experiences during the previous week (0 = never, 6 = every day). In the seven studies conducted by Bakker (2008), the three scales had good internal consistency, ranging from .75 to .86 for absorption, .88 to .96 for work enjoyment, and .63 to .82 for intrinsic work motivation. Test-retest reliability was also good for each scale, with coefficients around .75 (Bakker, 2008).

Table 3 Work-Related Flow Scale (WOLF)

Absorption

When I was working, I thought about nothing else.

I got carried away by my work.

When I was working, I forgot everything else around me.

I was totally immersed in my work.

Work Enjoyment

My work gave me a good feeling.

I did my work with a lot of enjoyment.

I felt happy during my work.

I felt cheerful when I was working.

Intrinsic Work Motivation

I did my work simply for the pleasure that it brought me.

I found that I also wanted to work in my free time.

I worked because I enjoyed it.

When I was working on something, I was doing it for myself.

I would still do this work, even if I received less pay.

I got my motivation from the work itself, and not from the reward for it.

Results

Structural equation modeling was used to test the hypothesized relationships. Anderson and Gerbing's (1988) two-step approach was taken, in which the measurement model for each latent construct was examined before testing the structural model. Confirmatory factor analysis (CFA) was used to test the measurement models. Structural equation techniques were conducted to evaluate the first and second hypotheses. Specifically, the total effect of leadership on flow

was examined. In addition, the mediating effect of psychological climate on the relationship between leadership and flow was evaluated. Bootstrap procedures were used to test the specific indirect effects proposed in Hypothesis 3.

First, the demographic characteristics of the sample are presented, followed by the descriptive statistics associated with the subscales used in the study. Next, the overall procedures used to assess model fit are described. Finally, the results from the confirmatory analyses are presented, followed by the results from structural equation modeling.

Descriptive Statistics

The demographic variables describing the sample are detailed in Table 4. Specifically, descriptive statistics are provided for gender, age, tenure, and whether the participant was in a managerial position. The sample showed a slight bias toward male participants, with 54.5% male and only 45.5% female. The participants' ages were concentrated in the 25-30 and 35-40 range, with each group representing almost 20% of the sample. The group of participants falling within the 18-24 age range only represented 3.7% of the sample, and those participants older than 66 only represented 0.8% of the sample. Most of the participants (86.33%) had been in their jobs for over one year. Very few, only 2.2%, had less than 3 months work experience. Over 25% had worked in their roles for 3-5 years, and 11.6% had worked there for more than 16 years. Thus, the majority of the sample was comprised of employees who were familiar with their leaders' behaviors and had developed overall perceptions of climate. About two-thirds (63.1%) of the respondents were in non-managerial roles.

Table 4 Demographic Variables

Variable	Frequency	Percentage
Gender		
Male	**223**	**54.5**
Female	**267**	**45.5**
Age		
18 to 24	**18**	**3.7**
25 to 30	**106**	**21.6**
31 to 34	**64**	**13.1**
35 to 40	**98**	**20.0**
41 to 45	**69**	**14.1**
46 to 50	**53**	**10.8**
51 to 55	**52**	**10.6**
56 to 60	**16**	**3.3**
61 to 65	**10**	**2.0**
66 and older	**4**	**0.8**

Table 4 continued

Variable	Frequency	Percentage
Tenure		
Less than 3 months	11	2.2
3 months – less than 1 year	56	11.4
1 – 2 years	87	17.8
3 – 5 years	128	26.1
6 – 10 years	99	20.2
11 – 15 years	52	10.6
16 years or more	57	11.6
Managerial Role		
Yes	181	36.9
No	309	63.1

Table 5 includes the descriptive statistics for the scales used in the study; means, standard deviations, and skewness values are presented. Among the climate subscales, contribution had the highest mean at 5.39, and role clarity and challenge had the lowest means at 4.74 and 4.78, respectively. Among the flow subscales, work enjoyment had the highest mean at 3.25; motivation had the lowest at 2.55. The spread or standard deviation of the climate subscales was fairly consistent; challenge was highest at 1.52, and role clarity was lowest at 1.40. Among the flow subscales, work enjoyment had the highest standard deviation at .96, and absorption had the lowest at .90. The skewness values for all of the variables were within the acceptable range, with

the exception of the contribution climate dimension, which had a moderately non-normal

skewness. Overall, the data were approximately normal.

Table 5 Descriptive Statistics

	M	SD	Skew
Climate			
Supportive Management	5.18	1.31	-0.81
Role Clarity	4.74	1.40	-0.68
Contribution	5.39	1.43	-1.12
Recognition	4.81	1.41	-0.48
Challenge	4.78	1.52	-0.60
Flow			
Absorption	2.78	0.90	0.16
Work Enjoyment	3.25	0.96	-0.24
Intrinsic Work Motivation	2.55	0.95	0.17
Transformational Leadership	24.68	7.37	-0.40

Overall Procedure

Structural equation modeling (SEM) techniques using the AMOS 3.62 software package

(Arbuckle, 1997) were used to test the hypotheses associated with the proposed model. An

advantage of SEM is that it distinguishes between manifest and latent variables. Latent variables

are theoretical or abstract variables hypothesized to influence observed, manifest variables.

Consequently, manifest variables, often called indicator variables, are observable variables that

are assumed to reflect underlying, latent factors. In SEM, any random error associated with the latent variables is estimated and eliminated from subsequent analysis; thus, relationships between latent variables can be assessed free of random error.

Because latent variables are not observable, researchers must set the scales of the variables. Typically, the scale for each latent variable is set by fixing one factor loading to any non-zero value; most commonly, this value is set at one. This study used an option in AMOS to set the scales for the latent variables; AMOS randomly assigned one path per variable to one.

Structural equation modeling typically consists of two parts: the measurement model and the structural equation model. Measurement models define latent variables in terms of the observed (i.e. manifest) variables that indicate them, and specify their measurement properties in terms of reliability and validity. The structural equation model defines relationships, both direct and indirect, among the latent variables.

Indices of Model Fit

A number of fit indices are available to determine the appropriateness or overall fit of a model, including statistical tests and descriptive indices. These fit indices fall into three categories: absolute indices, comparative or incremental fit indices, and more recently, Browne and Cudeck's (1993) error estimation approach. This study examined several fit indices to evaluate the overall fit of each model (Hu & Bentler, 1995; Hu & Bentler, 1999). If a model fit the data well, the individual parameters were examined to ensure that the magnitude and direction of path loadings were in the hypothesized direction.

Absolute

The chi square ($\chi 2$) statistic is the most commonly used index of model fit. A large chi square indicates a large difference between the proposed model and the observed data, and thus,

a poor-fitting model. However, because the statistic is highly sensitive to sample size, a large chi square could lead to misleading conclusions when computed on a large sample. Specifically, unimportant differences will suggest that the model is inadequate when, in fact, it is a good representation of the data. Thus, researchers who have large sample sizes should place more emphasis on descriptive-fit indices to evaluate the overall model fit. Despite these issues, the chi-square statistic is still widely reported in all model-fitting studies, with caveats explained as necessary. Thus, this study reported the Chi-square statistic; however, due to a large sample size, more emphasis was placed on goodness of fit indices.

The goodness of fit index (GFI; Joreskog & Sorbom, 1984) is another commonly used index of model fit. GFI assesses the relative amount of variances and covariances explained by the target model; it is analogous to the R-squared value obtained in multiple-regression analysis. However, a large GFI may simply be a function of over-fitting and a lack of parsimony due to an excessive number of parameters. The AFGI is analogous to the adjusted R-squared in regression, and presents an alternative to the GFI. It is commonly suggested that the GFI and AGFI be equal to or greater than .90 (Schumacker & Lomax, 2004) for adequate model fit, and a value close to .95 indicates good model fit (Schumacker & Lomax, 2004; Hu & Bentler, 1999). Recently, however, a number of researchers (Bentler, 1990; Hu & Bender, 1998, 1999; Marsh, Balla, & McDonald, 1988) have concluded that many absolute fit indices are relatively poor indicators due to their strong dependence on sample size. As such, they are becoming less relied upon as key indicators of model fit.

Another problem with the chi-square statistic and GFI index is that they favor complex models while researchers prefer parsimony or simplicity in models. The PGFI, however, is a test that penalizes models for lack parsimony. Thus, the inclusion of the PGFI, among other indices,

is a way to prevent the favoring of excessively complex models; overblown models do not replicate well. For these reasons, the current study examined the PGFI in addition to the chi-square, GFI, and AGFI. Although Byrne (2001) suggests that a PGFI value equal to or greater than .80 is needed to indicate adequate fit, conventional belief has been that a PGFI equal to or greater than .60 represents good parsimonious fit. Mulaik, James, Van Alstine, Bennett, Lind, & Stilwell (1989) advised that it is not unexpected, nor is it a red flag, to have PGFI values close to .50, as long as they are accompanied by other indices that are .90 or higher, such as the CFI or GFI.

Incremental

While absolute indexes compare a model to observed data, incremental fit indexes compare a model to a baseline model and assess proportional improvement in fit. All variables in the baseline model, and the covariances between them, are assumed equally uncorrelated; thus, it models the worst possible fit to the data and defines an appropriate zero-point. Although a number of incremental indices exist (NNFI, IFI, RNI), the comparative fit index (CFI) has been regarded by many researchers as the index of choice (Bentler, 1990). However, while incremental indices are useful in measuring a model's ability to explain observations, as compared to a null or baseline model, they do not enable a good comparison of competing models. For example, two different models may both be fairly adequate in explaining a set of data; however, incremental indices can not reliably indicate which model provides the best fit. Thus, like the other indices discussed up to this point, the current study examined the CFI in light of other indices to examine the adequacy of the model. By convention, a CFI value equal to or greater than .90 indicates acceptable model fit.

Error Estimation

RMSEA is a goodness-of-fit test developed by Brown and Cueck (1993) that penalizes for lack of parsimony in a model. Brown and Cueck's (1993) approach to fit indices involves estimating the error that is involved in fitting models. Specifically, this approach involves estimating the root mean square error of approximation (RMSEA). As the value of RMSEA approaches zero, the model's fit function better represents the fit function of the population. The RMSEA and chi-square tests both assess lack of fit due to an over-identification of restrictions in a model. However, the RMSEA includes parsimony as a criterion for adequacy, thereby, overcoming a critical disadvantage of the chi square test. Due to its advantages over many other fit indices, the current study also used the RMSEA to help evaluate model fit.

Cudeck and Brown (1993) stated that RMSEA values between .05 and .08 are indicative of an *acceptable* fit. Hu and Bentler (1999) stated that the RMSEA value should be less than or equal to .06 in order for a model to have adequate fit. Other researchers (Schumacker & Lomax, 2004) believe that a RMSEA value less than or equal to .05 indicates *good* model fit; whereas, a RMSEA value less than or equal to .10 indicates *acceptable* fit. MacCallum, Browne and Sugaurara (1996) stated that RMSEA values ranging from 0.08 to 0.10 implied *medium* fit, and values greater than 0.10 indicated poor model fit. Many academic researchers believe that a RMSEA value of .10 indicates acceptable fit, especially when other fit indices also indicate good model fit.

Summary of Criteria

In line with conventional practices and the recommendations of Hoyle and Panter (1995), this study utilized absolute indices (chi-square, GFI, AGFI, and PGFI), an incremental or comparative fit index (CFI), and the RMSEA to determine the overall fit of the proposed model.

Based on the arguments presented above, less emphasis was placed on the Chi-square statistic than on the descriptive-fit indices. Although all the fit indices mentioned above were examined, this study primarily relied upon the RMSEA, the CFI, and the PGFI to make a determination of model fit. Specifically, a determination of adequate model fit was made using the following criteria: a comparative fit index value (CFI) equal to or greater than .90, a parsimony-adjusted index value (PGFI) above .50, and a RMSEA value below .10.

Examination of Individual Parameters

As part of determining that each model adequately fit the data, individual parameters were also examined. In testing the measurement models, the magnitude of the path coefficients indicated whether indicator variables significantly loaded onto to their corresponding latent constructs. In evaluating the structural model, the magnitude and direction of the path coefficients were examined to ensure they were consistent with the hypothesized relationships and past research. Standardized errors were checked to make sure they fell within acceptable range.

In addition, when models did not fit the data well, individual paths were examined to locate areas where the model could be improved. The modification indices were used to help identify problematic items or paths. Modification indices show the degree to which the chi-square statistic would improve if non-theoretically related paths were allowed to co-vary. Although the addition of these paths can improve model fit, researchers run the risk of capitalizing on chance (Iacobucci, 2008). Therefore, the current study did not add any paths based on modification indices; rather, the modification indices were used to help determine whether certain items should be removed from the model (MacCallum, Roznowski, & Necowitz, 1992). Items were deleted when their absence made significant improvements to model fit.

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Confirmatory Factor Analysis

This study followed Anderson and Gerbing's (1988) two-stage approach to structural equation modeling, in which the researcher evaluates the fit of the measurement model for each latent variable before testing the structural model. Measurement models were tested by conducting a separate confirmatory factor analysis (CFA) for each variable. According to Shumacker and Lomax (1996), measurement models should be specified for all latent variables, both independent and dependent. CFA was used to estimate the relationships between the latent variables (transformational leadership, psychological climate, and flow) and the scales that indicated them.

Transformational Leadership

A first-order confirmatory factor analysis (CFA) was conducted to determine whether the seven items significantly loaded onto a single factor. The fit indices suggested the model was an adequate fit for the data ($\chi 2$ = 159.24, p = .00 (CFI = .92, PGFI = .46, and RMSEA = .14). Although the RMSEA was slightly larger than the acceptable cut-off of .10, the absolute and comparative fit indices were greater than .90, as shown in Table 6. In addition, the chi square statistic was small given the large sample size. As presented in Table 7, all factor loadings were statistically significant; all were higher than .70, with most being higher than .80. The high reliability of the scale (.93) and the high factor loadings supported the use of an overall score for transformational leadership.

Table 6 Goodness of Fit Indices for First-Order CFA Model for Transformational Leadership

Statistic/Index	Value
Chi-square	
Value	159.24
df	14
Probability level	.00
Absolute fit indices	
GFI	.93
AGFI	.86
Parsimony-adjusted measure	
PGFI	.46
Comparative fit indices	
CFI	.92
IFI	.92
RMSEA	.14

Table 7 Factor Loadings for the First-Order CFA Model of Transformational Leadership

Path	Beta	t-value	Sig.
Transformational Leadership (.93)*			
LEADER1	.70	Fixed	Fixed
LEADER2	.87	18.43	.000
LEADER3	.81	17.23	.000
LEADER4	.88	18.64	.000
LEADER5	.72	15.23	.000
LEADER6	.81	17.23	.000
LEADER7	.88	18.62	.000

* Internal coefficient alpha for scale in parenthesis

Psychological Climate

The first-order model for psychological climate provided a moderate fit to the data: $\chi2 = 560.86$, $p = .00$ (CFI = .89, PGFI = .62, and RMSEA = .092). Two items were associated with high modification indices and were removed from the analysis. The revised first-order model provided a better fit to the data: $\chi2 = 368.29$, $p = .00$ (CFI = .92, PGFI = .61, and RMSEA = .086). Several indicators suggested adequate to good model fit: the $\chi2$ was relatively small, the RMSEA was less than the acceptable cut-off of .10, the PGFI was greater than .50, and the CFI exceeded .90.

Past research has suggested that a single climate factor explains most of the variance in the specific climate dimensions (James & James, 1989; Brown & Leigh, 1996). Thus, a second-order model was tested to see whether the five dimensions loaded onto a single higher-order factor. The higher order factor represented "overall psychological climate". The second-order model also provided an adequate fit to the data: $\chi2 = 386.56$, $p = .00$ (CFI = .92, PGFI = .64, and RMSEA = .085). Additional fit indices are presented in Table 8. The indices of the first- and second-order models were very similar; both models fit the data equally well. Thus, the second-order model was used for further analyses to allow the examination of overall psychological climate. The factor loadings and reliabilities for each scale are shown in Table 9. All items loaded significantly onto their respective first-order constructs; most factor loadings were higher than .70, with none lower than .54. In addition, as shown in Table 10, all first-order factors loaded significantly onto the single higher-order factor, psychological climate. Because all subscales had reliabilities greater than .70, composite measures of each of the five subscales could be used to indicate a global psychological climate construct. Thus, for simplification purposes, psychological climate was indicated by five subscale scores in the final model.

Table 8 Goodness of Fit Indices for Second-Order CFA Model for Psychological Climate

Statistic/Index	Value
Chi-square	
Value	386.56
df	85
Probability level	.00
Absolute fit indices	
GFI	.91
AGFI	.87
Parsimony-adjusted measure	
PGFI	.64
Comparative fit indices	
CFI	.92
IFI	.92
RMSEA	.085

Table 9 Factor Loadings for Second-Order CFA Model of Psychological Climate

Path	Beta	t-value	Sig.
Supportive Management (.77)*			
CLIM1	.66	13.77	.000
CLIM2	.86	17.85	.000
CLIM3	.79	16.67	.000
CLIM5	.73	Fixed	Fixed
Role Clarity (.71)*			
CLIM6	.57	11.73	.000
CLIM7	.69	13.95	.000
CLIM8	.89	Fixed	Fixed
Contribution (.77)*			
CLIM9	.83	18.83	.000
CLIM11	.86	19.39	.000
CLIM12	.77	Fixed	Fixed

* Internal coefficient alpha for subscale in parenthesis

Path	Beta	t-value	Sig.
Recognition (.76)*			
CLIM13	.54	Fixed	Fixed
CLIM14	.83	12.08	.000
CLIM15	.84	12.15	.000
Challenge (.77)*			
CLIM16	.73	8.40	.000
CLIM17	.80	Fixed	Fixed

* Internal coefficient alpha for subscale in parenthesis

Table 10 Path Coefficients Between Second-Order Factor and Factors for Climate

Path	Beta	t-value	Sig.
Psychological climate to:			
Supportive management	.77	7.68	.000
Role clarity	.66	7.60	.000
Contribution	.88	8.02	.000
Recognition	.98	7.24	.000
Challenge	.49	Fixed	Fixed

Flow

Work-related flow occurs when absorption, enjoyment, and intrinsic motivation are simultaneously experienced; participants need to score high on all three flow components to indicate the presence of the flow experience (Bakker, 2008). Researchers have statistically addressed this issue by using second-order models of flow in their structural equation models (Bakker, 2008; Salanova et al., 2006). Specifically, the three components of flow served as indicators of a latent flow variable. The current study took this approach by examining a second-order model of flow. First, a first-order model was examined and then compared to a second-order model. It was important that the second-order model fit as well as the first-order model to justify its use.

The first-order model provided a fairly good fit to the data: $\chi2 = 326.46$, $p = .00$ (CFI = .93, PGFI = .64, and RMSEA = .084). While statistically significant, the chi square statistic was relatively small. In addition, the CFI and GFI were greater than .90, and the RMSEA was close to .080. Next, the second-order model was tested. As shown in Table 11, the fit indices of the second-order model were identical to the first-order model: $\chi2 = 326.46$, $p = .00$ (CFI = .93, PGFI = .64, and RMSEA = .084); thus, the second-order model fit as well as the first-order model. Table 12 presents the factor loadings and reliabilities for each subscale. All items loaded significantly onto their hypothesized latent variables; most were higher than .70, with none lower than .50. Also, each subscale had a reliability coefficient close to .80; therefore, aggregates of each subscale could be used in the final model. Table 13 shows that each first-order factor loaded significantly onto the second-order factor, flow. Overall, the second-order model provided a good fit to the data and was used in subsequent analyses.

Table 11 Goodness of Fit Indices for Second-Order CFA Model for Flow

Statistic/Index	Value
Chi-square	
Value	326.46
df	74
Probability level	.00
Absolute fit indices	
GFI	.91
AGFI	.88
Parsimony-adjusted measure	
PGFI	.64
Comparative fit indices	
CFI	.93
IFI	.93
RMSEA	.084

Table 12 Factor Loadings for the Second-Order CFA Model of Flow

Path	Beta	t-value	Sig.
Absorption (.78)*			
FLOW1	.51	Fixed	Fixed
FLOW2	.80	10.35	.000
FLOW3	.70	9.82	.000
FLOW4	.75	10.16	.000
Intrinsic Work Motivation (.77)*			
FLOW11	.82	Fixed	Fixed
FLOW12	.57	11.81	.000
FLOW13	.61	13.62	.000
FLOW14	.74	17.92	.000

* Internal coefficient alpha for subscale in parenthesis

Table 12 continued

Path	Beta	t-value	Sig.
Work Enjoyment (.87)*			
FLOW5	.80	Fixed	Fixed
FLOW6	.82	19.17	.000
FLOW7	.82	19.16	.000
FLOW8	.83	18.67	.000
FLOW9	.80	17.22	.000
FLOW10	.60	11.25	.000

* Internal coefficient alpha for subscale in parenthesis

Table 13 Path Coefficients between Second-Order Factor and Factors for Flow

Path	Beta	t-value	Sig.
Flow to:			
Absorption	.53	Fixed	Fixed
Intrinsic Work Motivation	1.02	7.52	.000
Work Enjoyment	.81	7.78	.000

Structural Model

Control Variables

The influence of several potential control variables on the model variables was examined, including participants' gender, age, tenure, and whether they were in a managerial role. Another potential control variable was the length of time that a manager had been the participant's boss. The amount of leader-employee interaction was also examined as a possible control. Three types of leader-employee interaction were examined: the amount of face-to-face interaction, whether they worked in the same office, and the frequency of overall interaction. To assess "overall interaction", participants were asked, "How frequently do you interact with this manager (any type of interaction, including phone, email, and face-to-face)?"

A preliminary analysis was conducted to investigate the effects of these variables on the hypothesized relationships. None of the variables were systematically related to all three model variables. The inclusion of the control variables did *not* change the magnitude or significance of the hypothesized structural relationships. Thus, the variables could be excluded from all further analyses. However, two variables dealing with frequency of leader-employee interaction were significantly related to transformational leadership: face-to-face interaction and overall interaction. Therefore, the decision was made to include these variables when testing the fit of the structural model by allowing them to co-vary with transformational leadership.

Model Fit

The first step in examining the hypothesized structural relationships was to determine the fit of the overall model. Two alternative models were compared: a partially mediated model and a fully mediated model. In the fully mediated model, there was a direct path from

transformational leadership to climate, and a direct path from climate to flow. Thus, the model involved an indirect path from leadership to flow through climate, as shown in Figure 1. The partially mediated model was identical to the fully mediated model with the addition of a direct path from transformational leadership to flow. Thus, in the partially mediated model, transformational leaders influenced flow both directly and indirectly through climate.

The three model components of transformational leadership, psychological climate, and flow were latent variables in the model. The scales introduced above served as the manifest variables. Specifically, transformational leadership was indicated by a single composite score of Carless et al.'s (2000) 7-item scale. Because only one observed variable was used to indicate the latent transformational leadership variable, it was necessary to correct for random measurement error. To account for measurement error, the error variance of the indicator was fixed equal to the product of its variance and one minus its reliability (Joreskog & Sorbom, 1993). Psychological climate was indicated by five composite scores of the five subscales of Brown and Leigh's (1996) climate scale. Work-related flow was indicated by composite scores of the three subscales of the WOLF (Bakker, 2008). Frequency of leader-employee interaction was also a latent variable in the model. It was indicated by two observed variables: face-to-face interaction and overall interaction.

The fit of the partially and fully mediated models are shown in Tables 14 and 15, respectfully. The fit indices of the fully mediated model [$\chi2$ = 198.02, p = .00 (CFI = .930, PGFI = .589, and RMSEA = .087] were nearly identical to the partially mediated model [$\chi2$ = 197.97, p = .00 (CFI = .929, PGFI = .575, and RMSEA = .088]. Overall, both models provided acceptable fit to the data. The RMSEA indicated adequate, although not great fit; however, the CFI and GFI were both greater than .90. Also, the PGFI was greater than .50. The fully

mediated model was nested within the partially mediated model, which permitted their

comparison using the chi-square difference test (Ullman, 2001). As expected, there was no

significant difference between the partially and fully mediated models: $\Delta\chi2$ (1, $N = 490$) = 0,

ns). However, the partially mediated model was rejected for two reasons. First, as shown in

Table 16, the direct path from leadership to flow was non-significant in the partially mediated

model. Thus, after controlling for the effects of climate, the direct effect of leadership on flow

was no longer significant. Partial mediation requires both the direct and indirect paths to be

significant; therefore, the partially mediated model was not correct. Second, the fully mediated

model (PGFI = .589) yielded a slightly more parsimonious fit than did the partially mediated

model (PGFI = .575). For these reasons, the fully mediated model was superior and was used in

subsequent analyses. Table 17 presents the standardized parameter estimates for the fully

mediated model; all hypothesized paths were statistically significant.

It is important to note that allowing the "frequency of interaction" variable to co-vary

with transformational leadership did not affect the strength or the significance of the structural

paths between leadership, climate, and flow. However, inclusion of the variable significantly

improved the RMSEA index of model fit from .107 to .087. See Table 18 for a comparison of

models with and without the "frequency of interaction" variable. Note that the strength of the

path coefficients remains virtually unchanged. However, while the CFI was similar for all

models, the RMSEA and PGFI indices were better when the "frequency of interaction" variable

was included in the model.

Figure 2 Hypothesized Structural Model
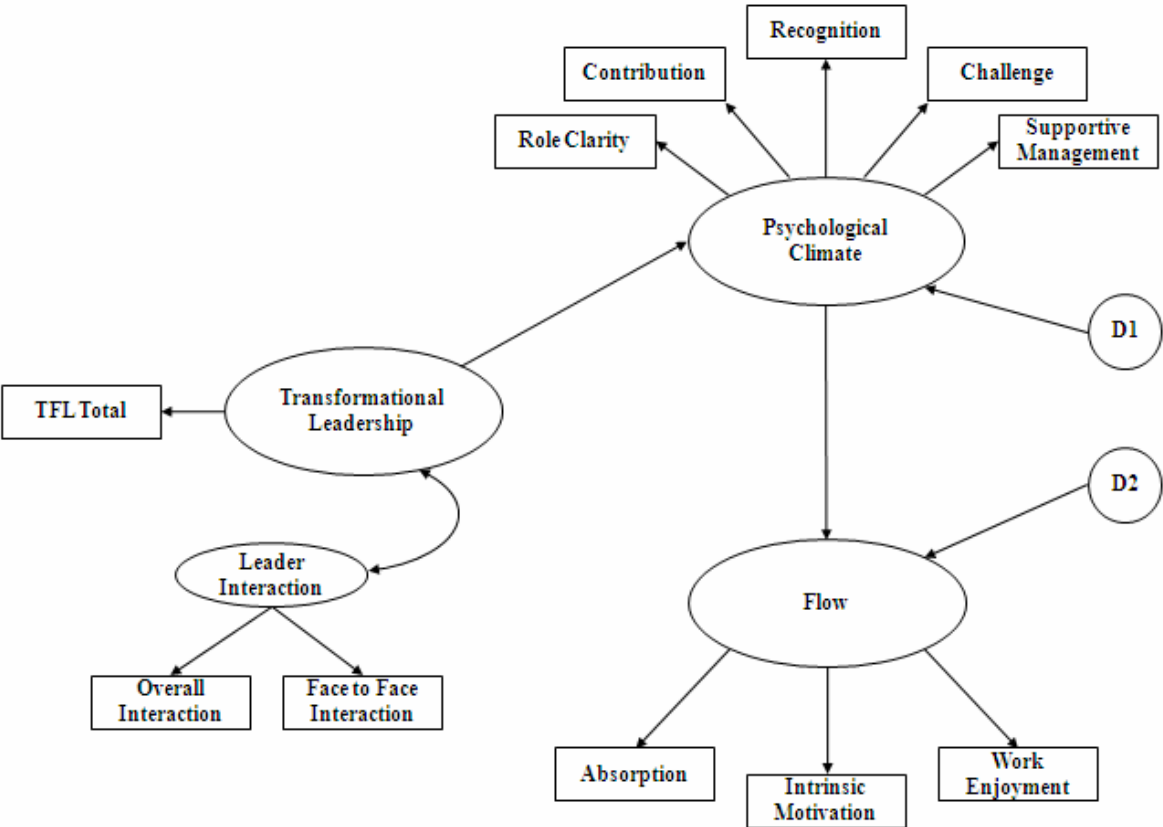
Table 14 Goodness of Fit Indices for Partially Mediated Model

Statistic/Index	Value
Chi-square	
Value	197.97
df	41
Probability level	.00
Absolute fit indices	
GFI	.925
AGFI	.880
Parsimony-adjusted measure	
PGFI	.575
Comparative fit indices	
CFI	.929
IFI	.929
RMSEA	.088

Table 15 Goodness of Fit Indices for Fully Mediated Model

Statistic/Index	Value
Chi-square	
Value	**198.02**
df	**42**
Probability level	**.00**
Absolute fit indices	
GFI	**.925**
AGFI	**.883**
Parsimony-adjusted measure	
PGFI	**.589**
Comparative fit indices	
CFI	**.930**
IFI	**.930**
RMSEA	**.087**

Table 16 Regression Paths for Partially Mediated Model

Path	Beta	*B*	SE	*t*	Sig.
Transformational Leadership to Climate	.79	.11	.01	16.77	.00
Climate to Flow	.64	.27	.05	6.39	.00
Transformational Leadership to Flow	.02	.00	.01	.22	.84

Table 17 Regression Paths for Fully Mediated Model

Path	Beta	*B*	SE	*t*	Sig.
Transformational Leadership to Climate	.79	.11	.01	16.84	.00
Climate to Flow	.65	.28	.03	8.23	.00

Table 18 Frequency of Interaction Variable: Comparison of Models

Models	Fit Indices			Paths	
	CFI	PGFI	RMSEA	TFL > C	C > F
Interaction related to all 3 variables	.929	.561	.090	.786	.650
Interaction related only to TFL	.930	.589	.087	.789	.653
Interaction excluded from model	.924	.532	.107	.789	.653

Note: TFL = Transformational Leadership; C = Climate; F = Flow

Hypothesis 1: Transformational Leadership has a Positive Effect on Flow

It was hypothesized that transformational leadership (TFL) would have a positive total effect (sum of indirect and direct effects) on followers' flow experiences. Because a fully mediated model was used, the total effect of leadership on flow was equivalent to the indirect effect of leadership on flow through climate. As shown in Table 19, transformational leadership had a statistically significant total effect on flow. Furthermore, transformational leadership had a significant positive effect on all three components of flow: intrinsic motivation, work enjoyment, and absorption. Hypothesis 1, therefore, was supported.

Table 19 Total Effect of Transformational Leadership on Flow

Path	Beta	*B*	SE	*t*	Sig.
Transformational Leadership to:					
Flow	.52	.03	.004	7.50	.000
Intrinsic Motivation	.42	.06	.005	11.20	.000
Work Enjoyment	.43	.06	.006	9.83	.000
Absorption	.24	.03	.004	7.50	.000

Hypothesis 2: Psychological Climate Mediates the Relationship between TFL and Flow

It was hypothesized that psychological climate would mediate the relationship between transformational leadership and followers' flow experiences. Specifically, transformational leadership was expected to influence overall psychological climate; in turn, overall climate was expected to impact flow. Two observations supported this hypothesis. First, the fully mediated model provided a fairly good fit to the data: $\chi^2 = 198.02$, p = .00 (CFI = .930, PGFI = .589, and RMSEA = .087]. Second, the hypothesized paths between all model variables were significant: transformational leadership predicted climate ($\beta = .79$, $p < .01$), and climate predicted flow ($\beta = .65$, $p < .01$). These two observations suggested that overall psychological climate was a mediator of the leadership-flow relationship; however, it was still necessary to examine the strength and significance of the indirect effect (Preacher and Hayes, 2008; Iacobucci, 2008; Sobel, 1982; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The significance of the mediating effect of climate was determined by utilizing the bootstrap function in AMOS.

As shown in Table 20, the indirect effect of transformational leadership on flow was significant, suggesting that overall climate significantly mediated the relationship between transformational leadership and flow. In fact, results indicated that transformation leaders had a significant indirect effect on each dimension of flow, through their influence on climate. Because the fully mediated model was used, the indirect effect of transformational leadership on flow (i.e., through climate) was equivalent to the total effect of leadership on flow. Thus, the table of indirect effects (Table 20) was identical to the table of total effects (Table 19 in Hypothesis 1). The indirect effect table presented below, however, also includes the bootstrap confidence intervals for the indirect effects.

Table 20 Indirect Effect of Transformational Leadership on Flow

Path	Beta	*B*	95% CI	SE	*t*	Sig.
Transformational Leadership to:						
Flow	.52	.03	.02, .04	.004	7.50	.000
Intrinsic Motivation	.42	.06	.05, .07	.005	11.20	.000
Work Enjoyment	.43	.06	.05, .07	.006	9.83	.000
Absorption	.24	.03	.02, .04	.004	7.50	.000

Hypotheses 3a-3e: Specific Indirect Effects

It was hypothesized that each dimension of climate would significantly mediate the relationship between transformational leadership and flow. We were interested in examining the *unique* contribution of each specific indirect effect. For this reason, all climate dimensions were simultaneously examined in a single model, as opposed to testing separate mediation models for each variable (Preacher & Hayes, 2008). The bootstrapping function in AMOS only tests for the significance of the total indirect effect (i.e., overall climate). AMOS does not have the capability to determine which *specific* indirect effects (i.e., aspects of climate) significantly contribute toward producing a significant *overall* indirect effect. Thus, the current study utilized an SPSS macro developed by Preacher and Hayes (2008) that allows researchers to calculate the significance and unique contribution of each specific indirect effect. The SPSS macro estimates indirect effects using the normal theory approach (i.e., Sobel test; Sobel, 1982), the bootstrap approach, and the stepwise procedure described by Baron and Kenny (1986). Because the normal theory approach assumes normality of the sampling distribution of the indirect effect, experts in mediation procedures (Preacher & Hayes, 2008; MacKinnon, Lockwood, & Williams

(2004) have recently recommended the bootstrapping procedure over normal theory tests. Thus, the current study relied upon bootstrap results to determine the significance of each indirect effect; however, Sobel (1982) results are also reported. Flow was aggregated into a single variable for the purposes of this test.

As shown in Table 21, the indirect effect of contribution, recognition, and challenge significantly mediated the relationship between transformational leadership and flow; thus, Hypotheses 3a-3c were supported. Hypotheses 3d and 3e, however, were not supported; supportive management and role clarity were not significant mediators of the leadership-flow relationship after accounting for the other climate dimensions. This finding can be explained by the non-significance paths from the two climate dimensions to flow (i.e., "b" path).

Table 21 Unstandardized Coefficients for Specific Indirect Effects

Mediators	*a*	*b*	Sobel		Bootstrap	
			Value	Sig.	PI	95% CI
Contribution	.09**	1.44**	.14	.001	.14	.06, .22
Recognition	.12**	1.37*	.17	.004	.17	.04, .29
Challenge	.05**	1.31**	.06	.001	.07	.03, .11
Role Clarity	.10**	.64	.06	.074	.06	-.01, .13
Supportive Management	.12**	-.82	-.10	.079	-.10	-.20, .01

Note. N = 490. Bootstrap sample size = 10,000. *a* = IV to mediator; *b* = mediator to DV. DV is Flow; IV is Transformational Leadership. *PI* = boot point estimate. * *p* < .05; ***p* < .001.

Discussion

Overview of Study

Leaders are one of the most influential actors in shaping employees' work environments and experiences. Although the construct of work-related flow has received recent empirical attention, very little is known about a leader's impact on flow. The current study addressed this need by examining the relationship between transformational leadership and followers' experiences of flow. The followers of transformational leaders were expected to experience flow more frequently than the followers of leaders who rarely exhibited transformational behaviors. Specifically, it was hypothesized that transformational leaders would have a positive influence on flow through the climate they create; thus, climate was expected to mediate the leadership-flow relationship. This hypothesis was based on the idea that transformational leaders are likely to create work conditions that are conducive to flow. In turn, the totality of the work conditions would contribute towards employees' overall perception of climate, in terms of "what it is like to work here." The examination of climate as a mediator addressed Yukl's (1999) call for researchers to investigate mechanisms by which transformational leaders exert their positive effects.

The results of the current study provided evidence in support of the proposed model. Psychological climate mediated the relationship between transformational leadership and flow. These findings suggest that leaders who engage in transformational behaviors create a meaningful work climate, which in turn, leads to more frequent flow experiences among followers. The dimensions of climate that significantly mediated the relationship between leadership and flow were recognition, contribution, and challenge. Future research utilizing a

longitudinal design is needed to validate the causal nature of these findings (Breckler, 1990; Iacobucci, 2008).

The current study made parallels between the "engagement" and "flow" constructs; flow was conceptualized as a particular form of situation-specific engagement. Both "engagement" and "flow" involve underlying dimensions of absorption and enjoyment with one's work. Furthermore, they both have self-employment underpinnings, in terms of the extent to which employees bring aspects of themselves into their roles (Kahn, 1990). While direct comparisons between flow and engagement are rarely made, Macey et al. (2008) explain that recent studies on engagement have begun to make a distinction between situation-specific or transient engagement (i.e., flow), and the more enduring form of engagement that is less dependent on the immediate situation.

Due to the current problems associated with the diverse conceptualizations and measurements of "engagement" (Macey et al., 2008), the well-established construct of "flow" presents a useful alternative in the measurement of employee engagement. In the current study, the presence of flow signified complete cognitive engagement in one's work, as defined by the simultaneous experience of enjoyment, absorption, and intrinsic motivation. By examining the impact of transformational leadership on flow, the current study addressed the question: "What can leaders do to improve the percentage of time that employees are engaged?" Findings suggest that leaders can improve employee engagement by engaging in transformational behaviors. The conceptual similarities between flow and engagement illustrate the applicability of flow research to the workplace.

Transformational Leadership, Climate, and Flow

A central aim of the current study was to examine whether leadership, in general, has an impact on employees' flow experiences. The current study examined the transformational style of leadership for two reasons. First, the transformational style of leadership is considered one of the most effective styles of leadership, because it inspires employees to perform beyond expectations (Bass, 1998; Bass & Riggio, 2006). In the current study, transformational leadership was indicative of effective leadership. Second, studies have produced empirical evidence that transformational leaders generate high levels of intrinsic motivation in followers (Picollo & Colquitt, 2006; Shamir, House, & Arthur, 1993; Bono & Judge, 2003), as compared to other styles of leadership (Bass, 1985). Because intrinsic motivation is an important component of flow, transformational leadership was a logical choice for this study. Indeed, findings from the current study provided further evidence that the transformational style of leadership has a positive and significant impact on the intrinsic motivation of followers ($\beta = .42$, $p < .01$).

The test of the hypothesized structural model revealed that transformational leadership had a positive total effect on followers' flow experiences, supporting Hypothesis 1. This finding suggested that followers of effective leaders experienced flow more frequently than followers of ineffective leaders. Specifically, the more often leaders engaged in transformational behaviors, the more often their followers experienced flow. In contrast, the followers of leaders who rarely engaged in transformational behaviors experienced significantly lower levels of intrinsic motivation, enjoyment, and absorption when carrying out their work duties. Other leadership behaviors may also be important to the occurrence of flow. For example, leaders can be transformational and transactional at the same time (Bass, 1985); one style can be more effective

than the other depending on the context of the work situation. Thus, flow researchers are encouraged to continue research on various leadership behaviors, in terms of whether and how they influence flow.

The present study sought to understand the mechanisms by which transformational leaders influence followers' experiences of flow. The relationship between transformational leadership and flow was not expected to be a simple direct relationship. Instead, it was hypothesized that transformational leaders would influence flow through the climate they create. No other empirical studies have examined the link between transformational leadership, climate, and flow; therefore, it was not clear whether climate would partially or fully mediate the leadership-flow relationship. For example, there might be other mechanisms by which transformational leaders influence flow, in which case climate would only partially mediate the leadership-flow relationship. To determine the extent to which climate mediated the relationship, the current study compared a fully mediated model to a partially mediated model. The fit indices of the two models were very similar. In addition, a chi-square difference test revealed a non-significant difference in fit between the two models. However, in the partially-mediated model, the direct effect between transformational leadership and flow was not significant. Thus, after controlling for the effects of climate, the direct effect of leadership on flow was no longer significant. Partial mediation requires both the direct and indirect paths to be significant. Thus, the full mediation model was superior to the partial mediation model in explaining the data.

After testing the hypothesized structural model, two observations suggested that overall psychological climate was a mediator of the leadership-flow relationship. First, the fully mediated model provided a fairly good fit to the data: $\chi2 = 198.02$, $p = .00$ (CFI = .930, PGFI =

.589, and RMSEA = .087]. Second, the hypothesized paths between all model variables were significant: transformational leadership predicted climate (β = .79, p < .01), and climate predicted flow (β = .65, p < .01). However, in order to establish that psychological climate was a significant mediator, it was necessary to conduct a significance test of the indirect effect. This is a step that is often overlooked in mediation studies; however recent researchers have stated that this is a necessary step in establishing mediation (Iacobucci, 2008; Preacher & Hayes, 2004, 2008; Sobel, 1982; MacKinnon et al., 2002). The current study conducted a bootstrap test to examine the strength and significance of the indirect effect. Results revealed that the indirect effect of transformational leadership on flow was significant, in which climate was the mediating variable. Hypothesis 2, therefore, was supported.

Overall, the relatively good fit of the structural model and the significance of its corresponding paths provide evidence for a relationship between transformational leadership, climate, and flow. Specifically, a strong direct relationship was found between climate and flow (β = .65, p < .01), which indicated that employees' climate perceptions influenced their levels of intrinsic motivation, absorption, and enjoyment with their work. Thus, by having a strong positive impact on climate (β = .79, p < .01), transformational leaders were able to influence the frequency with which employees experienced flow. In fact, the presence of full mediation revealed that transformational leaders' effect on flow was mostly indirect, suggesting that climate is a key mechanism by which transformational leaders influence flow. This finding builds on two studies showing that transformational leaders influence follower outcomes, such as job satisfaction (Nemanich & Keller, 2007) and safety behaviors (Barling et al., 2002), through the climate they create.

None of the control variables had an effect on the hypothesized relationships; thus, they were excluded from all analyses. However, two observations suggested that one control variable, "frequency of leader-employee interaction", should remain in the model. First, the variable had a small, but significant correlation with transformational leadership ($r = .21$). Second, the inclusion of this variable significantly improved the RMSEA value from .107 to .087. After noting these observations, several factors were considered before including the variable in the model. The most important finding regarding this variable was that it had no impact on the hypothesized structural relationships when included as a control variable. Specifically, the path coefficients between transformational leadership, climate, and flow remained the same. In addition, the size and significance of the indirect or mediating effect of climate did not change. Because the variable did *not* impact hypothesized relationships, an argument could be made in favor of excluding the variable, for the reason that it potentially complicated a model that was already significant. However, the inclusion of this variable provided interesting information about transformational leadership. Specifically, employees who did not interact frequently with their managers were somewhat less likely to rate them highly on transformational behaviors. Participants were asked to rate how often their manager engaged in certain behaviors; the highest option on the scale was "frequently, if not always". Infrequent interaction probably made it difficult for employees to recognize a *pattern* of transformational behaviors; consequently, they would be less likely to give high ratings on the scale. It is important to note that the correlation between transformational leadership and frequency of interaction was significant, but fairly low ($r = .21$). Thus, it cannot be concluded that perceptions of transformational leadership were highly influenced by the amount of leader-employee

interaction. Overall, the variable was included in the model because its relationship with transformational leadership was informative and significantly improved the model fit.

Results revealed that the relationship between transformational leadership and flow was fully mediated by a meaningful climate. The presence of full mediation, however, does not mean that climate is the only mechanism by which transformational leaders influence flow. Other personal and organizational factors may also mediate the transformational leadership-flow relationship. For example, there are likely to be other ways by which transformational leaders enhance the meaningfulness of employees' work. In addition, there are likely to be other characteristics of psychological climate that mediate the relationship between leadership and flow, such as work group cooperation, warmth and support, or role stress and lack of harmony (Campbell et al., 1970; James & James, 1989; James & McIntyre, 1981). Future research on the link between leadership and flow should examine other potential mediators of the relationship.

Specific Indirect Effects

It was hypothesized that each dimension of climate would significantly mediate the relationship between transformational leadership and flow. All climate dimensions were simultaneously examined in a single model, as opposed to testing separate mediation models for each variable (Preacher & Hayes, 2008). Results indicated that three of the five climate dimensions were significant mediators of the transformational leadership-flow relationship: challenge, recognition, and contribution. Thus, transformational leaders enhanced employees' beliefs that their work was challenging, appreciated and recognized, and important to the organization's goals. In turn, the presence of these climate perceptions facilitated the occurrence of flow.

Kahn's (1990) study found that perceptions of challenge, contribution, and recognition were a source of meaning for employees; thus, the current findings suggest that transformational leaders influence flow by making employees' work more meaningful. This finding builds on other research linking transformational leadership to perceptions of meaning. For example, Arnold et al. (2007) found that meaningful work was the mechanism by which transformational leadership affected psychological well-being. Piccolo and Colquitt (2006) found that transformational leaders enhance followers' perceptions of five core job characteristics (Hackman & Oldham, 1980), all of which enhance perceptions of meaningful work (Hackman & Oldham, 1980; May et al., 2004).

Two climate dimensions failed to contribute significantly to the overall mediating effect of climate: role clarity and supportive management. Interestingly, the climate dimensions Kahn (1990) found to be indicative of psychological meaningfulness (challenge, contribution, and recognition) were predictive of flow, while the climate dimensions indicative of safety (role clarity and supportive management) were not. The direct paths from transformational leadership to both of these variables were significant, suggesting that transformational leaders had a positive influence on perceptions of supportive management and role clarity. However, the direct paths from supportive management and role clarity to flow were non-significant, indicating these two dimensions did not contribute to the prediction of flow.

It is important to note, however, that supportive management and role clarity were fairly highly correlated with the other climate dimensions, particularly with contribution and recognition. Supportive management had a correlation of .56 with contribution and .64 with recognition. Role clarity had a correlation of .44 with contribution and .51 with recognition. These findings suggest that supportive management and role clarity play an important function in

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establishing the other climate conditions. Thus, although these two dimensions were not predictive of flow, they were still important as they were strongly correlated to the other aspects of climate. Future researchers investigating the leadership-climate-flow relationship are advised to take all five climate characteristics into consideration when drawing conclusions.

When interpreting the significance of the specific mediators, one must consider the implications of the multiple mediator approach. The simultaneous testing of multiple mediators involves parsing out the *unique* contribution of each climate dimension or indirect effect. Thus, for a climate dimension to significantly mediate the leadership-climate relationship, it had to contribute significant variance to the prediction of flow, over and above what it shared with the other dimensions. The significance of the indirect effect associated with a particular mediator will usually be attenuated to the degree of overlap it shares with the other mediators in the model (Preacher and Hayes, 2008). Preacher and Hayes (2008, pg. 881-882) explain that "a specific indirect effect through a mediator (say, M3) in the multiple mediation context is not the same as the indirect effect through M3 alone, except in the unlikely circumstance that all other mediators are uncorrelated with M3." It is important to remember these facts when thinking about the results from the current study. For example, the role clarity and supportive management dimensions were not significant predictors of flow when the other climate dimensions were taken into account. However, post hoc analyses revealed they were significant predictors of flow and significant mediators of the leadership-flow relationship when they were the *only* climate dimension in the model. Thus, the non-significance of these dimensions in the prediction of flow does not indicate that role clarity and supportive management are not related to flow. Instead, the lack of significance indicates they are not important in the prediction of flow when the other climate dimensions are present.

Contributions to Flow Research

The current study adds to the small body of research on the work conditions that are most conducive to flow. Empirical research has shown that autonomy (Bakker, 2008; Demerouti, 2006; Bakker, 2005), opportunities for self-growth (Bakker, 2008), social support (Bakker, 2005; Salanova et al., 2006), clear goals (Salanova, et al., 2006), and performance feedback (Bakker, 2005; Demerouti, 2006) facilitate the occurrence of flow. Demerouti (2006) found that five core job characteristics, as defined by Hackman and Oldham (1980), are related to work-related flow. In fact, a few parallels can be drawn between Demerouti's (2006) study and the current study. Specifically, the job characteristics referred to as "significance" and "feedback" are similar to the climate characteristics of contribution and recognition, respectfully. In addition, an argument could be made that the job characteristics of "skill variety" and "autonomy" are similar to the climate characteristic of "challenge". Although climate characteristics are not the same things as objective characteristics of one's job, they can have similar effects on work motivation.

In one of the only studies to examine the impact of leadership behavior on flow, Bakker (2005) found that supervisory coaching had a positive impact music teachers' challenge-skill balance at work, which in turn, influenced their experiences of flow. The current study expands Bakker's (2005) findings by examining a wider spectrum of leadership behaviors in a variety of industries. This was the first empirical study to examine the impact of leadership style on work-related flow, in which "leadership style" represented a pattern of behaviors. This study demonstrated that transformational leadership and a meaningful climate are work conditions that are strongly related to flow. Climate perceptions of recognition, contribution, and challenge are particularly important to work-related flow (absorption, intrinsic motivation, and enjoyment).

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Furthermore, transformational leaders play a significant role in shaping those climate characteristics.

By linking climate to flow, this study adds to research showing that work conditions favoring challenge, recognition, and contribution lead employees to engage in their work. Brown and Leigh (1996) demonstrated that a climate with the same five characteristics was related to effort and job involvement. Kahn (1990) found that the presence or absence of these environmental factors influenced whether employees would completely engage in their work or psychologically detach themselves from it. According to Kahn (1990; pg. 700), the perceptions of meaning associated with these climate characteristics lead people to drive "personal energies into role behaviors (self-employment)."

Practical Implications

The conceptualization of flow as a form of engagement illustrates the applicability of flow to the work place. Engagement has become a very popular subject in organizations; however, little is known about what leaders can do, on a daily basis, to engage employees. Because "flow" is a momentary form of engagement, and is highly dependent upon the immediate work situation, managers are likely to have significant control over flow. Indeed, the current study has found this to be true. The findings of this study point to leadership behaviors and climate conditions that are conducive to flow; managers can apply these findings to the workplace in attempt to improve employee engagement. For example, the transformational style of leadership has a positive impact on momentary employee engagement, in the form of increased intrinsic motivation, enjoyment, and absorption with one's work. Managers can incorporate transformational behaviors into their own leadership style to improve employee engagement. In addition, the current findings indicate that recognition, challenge, and

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contribution are climate conditions that are conducive to flow; thus, managers wanting to engage employees can focus on ways to create these meaningful work conditions. This study provides evidence that a transformational style of leadership helps to do this. Ultimately, managers' effectiveness at maximizing the percentage of time that employees are in flow depends on their ability to create and maintain a climate that is conducive to flow. The current findings provide managers with some insight into how they, personally, can influence employee engagement.

Organizations would benefit from efforts to create work conditions that are conducive to flow. Csikszentmihalyi and Massimini (1985) explain that employees invest more attention to their work and increase overall levels of job involvement when their work conditions are conducive to flow. Csikszentmihalyi (1978) found that employees who frequently experience flow will spend a greater percentage of their job time actually working. Research has also shown that work-related flow predicted in-role (Demerouti, 2006; Bakker, 2005) and extra-role performance (Demerouti, 2006) at work. Turner, Barling, & Zacharatos (2002) advocate for the exploration of various work processes and practices that help to produce more positive work environments. The current study helped address this need by showing that a transformational style of leadership helps to create a positive and meaningful work climate that is conducive to flow.

Study Limitations

The seven-item GTL (Carless et al., 2000) was chosen over the longer Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1995) in attempt to keep the entire survey, which was comprised of 68 items, at a reasonable length. The goal of keeping the survey at a reasonable length was to prevent participants from getting tired and careless when addressing the items. While the MLQ is a more well-established scale than the GTL, Carless et al. (2000) found

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that the GTL correlates strongly with the MLQ (Avolio, Bass, & Jung, 1995). The GTL assesses seven dimensions of transformational leadership: communicates a vision, develops staff, provides support, empowers staff, is innovative, leads by example, and possesses charisma. These dimensions differ slightly from those assessed by the MLQ (Bass & Avolio, 1995); however, substantial overlap exists between the two scales.

Certain issues relating to the global nature of the GTL (Carless et al., 2000) must be addressed. Because each of the seven dimensions comprising the GTL are assessed by only one item, the GTL is likely not as effective as the MLQ (Bass & Avolio, 1995) in attempts to measure, isolate, and compare the components of transformational leadership. With fewer items, the GTL can not directly assess all possible behaviors associated with transformational leadership. In fact, Carless et al. (2000; pg. 393) point out that "some of the items use a single omnibus statement to represent quite complex behaviors". Because the GTL is a global measure of transformational leadership, this study could not reliably determine which specific transformational behaviors had the greatest influence on specific dimensions of climate. The primary aim of this study, however, was to investigate whether and how leadership, in general, influences the flow experiences of followers; therefore, a global measure of transformational leadership sufficed. It was not necessary to isolate the dimensions of transformational leadership to study the relationship between leadership and flow. More important to this study was the ability of the GTL to discriminate between effective and non-effective leaders, high and weak performing managers, and highly motivating and less motivating managers (Carless et al., 2000). Thus, the GTL served the purpose of this study well by providing a short, broad assessment of transformational leadership behaviors.

A methodological limitation of the current study involved the measurement of "flow". Currently, options for flow measurement are limited, because it is not yet technically feasible to assess real-time flow experiences as they occur (Bakker, 2008). Participants in the present study were asked to report on their flow experiences retrospectively by using the WOLF instrument (Bakker, 2008). The validity of the results from this study, therefore, depended on the degree to which participants accurately recalled their experiences in the previous week. In contrast, the experience-sampling method (ESM) used by Csikszentmihalyi (1990) allows researchers to sample experiences as they occur in natural contexts. The ESM requires individuals to carry a beeper or palmtop computer that will signal them at random times throughout the day; when they are signaled, individuals report their experiences and feelings at that particular moment (Csikszentmihalyi, 1990). Thus, many of the biases associated with recall are eliminated with ESM, because the beeper allows participants to report how they are feeling at a particular moment in time. For these reasons, retroactive methods of flow assessment may not capture individuals' experiences as well as experience-sampling methods (ESM). Despite these issues, retrospective recall was the most viable option for the current study; utilization of a large multi-organization sample made it difficult and costly to provide several hundred alerting devices to participants in multiple locations.

Another limitation of the current study was the sole reliance on self-report data. When a study uses only one type of data collection, there is potential for mono-method bias and inflated correlations. Thus, the potential existed for artificially high observed relationships, as compared to those that might have resulted if several methods of data collection were used. Negative affectivity could be a potential biasing variable in this study. Future studies may want to statistically control for negative affectivity to rule out any systematic bias. For example,

structural equation modeling can be used to examine the structural relationships among model variables after controlling for negative affectivity. Researchers can compare the controlled model to an uncontrolled model to determine whether negative affectivity has a significant impact on structural paths between leadership, climate, and flow.

Spector (2006), however, builds a compelling case that the problem of mono-method bias has been exaggerated, as it is often accepted as a universal truth even though readily available evidence exists to suggest otherwise. Spector (2006) found evidence refuting the assumption that common method assessment using self-report methodology guarantees significant correlations among variables. Specifically, Spector (2006) identified peer-reviewed studies that failed to produce significant correlations, even though all variables were assessed by the same method; if mono-method bias was present in these studies, the correlations between variables would have been significant at a baseline level. Spector (2006) found a lack of inflated correlations even in studies with very large sample sizes, in which the smallest amount of common method variance would have been detected. Thus, although the potential for mono-method bias in the current study can not be ruled out, it should not be automatically assumed that inflated correlations biased the data.

This study used StudyResponse to recruit participants. Conducting online psychological research through recruiting organizations, such as StudyResponse, has a number of advantages. One of the biggest advantages is the availability of a large sample of working people. Because many organizations do not like researchers to take employees away from their jobs and disrupt their work, it can be very difficult for organizational researchers to obtain a sample of full-time employees. Thus, without organizations like StudyResponse, the only samples available to organizational researchers are often college students. The responses and behavior of college

students, unfortunately, do not generalize very well to that of full-time employees. With StudyResponse, the researcher has the ability to recruit full-time employees and to specify certain characteristics of the sample. Another major advantage of online research, via organizations like StudyResponse, is the better generalizability of research findings due to increased sample heterogeneity. The internet allows access to individuals representing a wide-variety of demographics. The people invited to participate in the current study represented a variety of jobs and industries.

A potential weakness of StudyResponse is that it depends on opportunity samples of volunteers in order to obtain samples (Kraut et al., 2003). For this reason, Stanton (2006) explains that the available participants do not represent a cross section of the U.S. population on a number of criteria. For example, StudyResponse volunteers tend to have better access and experience with computers, higher levels of education, and a greater interest in web-surfing for leisurely purposes (Stanton, 2006). Any participant recruitment approach, however, is going to have weaknesses, in terms of collecting a perfectly random and representative sample of participants from a target population. For more information on StudyResponse, please consult their website: http://studyresponse.syr.edu/studyresponse/index.htm.

A number of weaknesses are associated with online research, in general. First, online research is commonly associated with sample biases (Kraut et al., 2003). For example, researchers must take into account the potential differences between people who use the Internet and those who do not. Research shows that people who use the Internet are more likely to be young, white, and to have children (U. S. Department of Commerce, 2002). Furthermore, some evidence suggests that Internet users are more likely to be extroverted and to have higher levels of stress than non-users (Kraut, Fussell, Brennan, & Siegel, 2002). Second, the anonymity

frequently associated with online surveys can cause problems for researchers. For example, the anonymity might encourage some individuals to participate just so they can report false answers and sabotage data. In addition, some individuals might try to damage data by submitting their responses more than one time (Kraut et al., 2003). The current study prevented repeat submissions by requiring participants to use an identifier issued to them by StudyResponse to submit their data. Finally, online participants may simply devote less time and attention to the research task than they would if they were in some type of contact with the researcher, such as on telephone interviews or in a laboratory (Kraut et al., 2003). When people are in the same room with the researcher or even on the phone, they feel more obligated to "be a good participant". Thus, in this way, the researcher has less control over the procedure. Although there can be problematic issues associated with online methods of recruiting samples and collecting data, the advantage of obtaining a large sample of employees from a variety of positions and industries far outweighed the disadvantages for the purposes of the current study.

Finally, a methodological limitation of the current study was that all the data were correlational due to the cross-sectional design of the study. Even though the hypothesized relationships were conceptualized as causal in nature, true tests of causality were not possible due to the cross-sectional design of the study (Iacobucci, 2008; Kline, 2005). Thus, this study could not actually prove that transformational leaders create a meaningful climate or that a meaningful climate causes the onset of flow. Furthermore, the possibility that the observed significant relationships were actually caused by the reverse of what was proposed in the model can not be ruled out. For example, the model specifies that a meaningful climate is an antecedent of work-related flow; however, findings from a study by Salanova et al. (2006) suggest that the relationship may also goes in the other direction. Specifically, they found

evidence for reversed causation between flow and organizational resources; frequent flow experiences had a positive effect on organizational resources over time (Salanova et al., 2006). Thus, it is possible that employees who frequently experience flow might have a positive impact on climate over time. For these reasons, the findings of this study must be replicated in longitudinal studies to validate the causal nature of the relationships in the model (Iacobucci, 2008; Kline, 2005).

Despite the cross-sectional nature of the study, the hypothesized model was based on theory and empirical research; therefore, the causal claims presented in the model are highly plausible. Furthermore, much can still be learned from the results of this study. First, this study provides evidence for a strong relationship between transformational leadership and followers' experiences of flow. While causation can not be proven, the control that leaders have over employees' work experiences suggests that the leadership-flow relationship is likely due to leaders' impact on flow and not the reverse. Second, the findings revealed a strong positive relationship between flow and a climate characterized by challenging work, an emphasis on recognition, and an appreciation of employees' contributions. Longitudinal research is needed to prove that transformational leaders create work climates that, in turn, are conducive to flow.

Conclusion

Results of this study provide evidence that transformational leaders have a positive effect on followers' flow experiences. Furthermore, findings indicate that transformational leaders have a strong indirect effect on flow through their influence on psychological climate. Three of the five climate dimensions were significant mediators of the leadership-flow relationship: challenge, recognition, and contribution. Replication of these findings using longitudinal studies

is needed to validate the causal nature of these results. Researchers are encouraged to investigate other types of leadership behaviors, in terms of their impact on flow.

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