8-22-2014

The Mediating Effects of Transformational Leadership on Leader Goal Orientation and Team Performance

Tyree D. Mitchell
DePaul University, Tyreedmitchell@gmail.com

The Mediating Effects of Transformational Leadership on Leader Goal Orientation and Team Performance

A Thesis

Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

By

Tyree David Mitchell

August 4, 2014

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Thesis Committee

Annette J. Towler, Ph.D., Chairperson

Alice F. Stuhlmacher, Ph.D.

Acknowledgements

First and foremost, I would like to give the glory and honor to my Lord and savior Jesus Christ—without Him none of this would be possible! Secondly, I would like to my thesis chair Annette Towler and committee member Alice Stuhlmacher for all of their constructive feedback and helpful advice that made this project a great success. Also, I would like to thank Suzanne Bell for allowing me to use her laboratory and some of her lab materials to help complete my experiment. I would be remiss if I didn't acknowledge Stefanie Mockler and Jasmin Soto who helped me pilot test and collect data for this project. Finally, I would like to thank my family and friends for their support, encouragement, and prayers throughout this entire thesis project.

Biography

The author was born in Landover, MD, December 19, 1989. He graduated from Oxon Hill High School in Oxon Hill, MD in 2007 and received his Bachelor of Arts degree in Psychology from Hampton University in Hampton, VA in 2011; he graduated summa cum laude.

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Abstract

Transformational leaders are capable of elevating individual and unit performance by articulating a compelling vision, explaining how the vision can be attained, and expressing confidence in team members and followers. Despite the abundance of research on the effects of transformational leadership behavior on organizational outcomes, research regarding the antecedents of such behavior is limited. Drawing on goal orientation theory, this research examined the leader's goal orientation, specifically state learning-approach and state performance-avoid goal orientation, as precursors of transformational leadership behaviors, leader effectiveness, and team performance. The relationship between leader state goal orientation and outcomes (i.e., team performance and leader effectiveness) was hypothesized to be mediated by transformational leadership behaviors, active management, and laissez-faire leadership. Using an experimental design, undergraduate team leaders were induced with a learning-approach or performance-avoid state goal orientation and several individual difference measures were administered to 49 dyads/teams. The teams participated in a task designed for leaders to exhibit their leadership skills. Results revealed that the leader's goal orientation significantly influenced perceptions of transformational leadership, and transformational leadership positively impacted ratings of leader effectiveness on the task. Laissez-faire leadership and active management did not significantly influence ratings of leader effectiveness. Additionally, the leader's goal orientation failed to directly impact leader effectiveness, team performance and other leadership behaviors (i.e., perceptions of laissez-faire leadership and

active management). The results provide support for the notion that the leader's goal orientation can be a precursor of transformational leadership behaviors, as well as further support for the positive effects of transformational leadership behavior on leader effectiveness. Implications for leadership science and practice are discussed.

Introduction

Transformational leadership speaks directly to followers' beliefs and values with the intention of inspiring followers and increasing their awareness of critical organizational issues (Yukl, 2010). This form of leadership is often contrasted with transactional leadership, which involves an exchange process that often leads to follower compliance with leader requests but not increased motivation and commitment to organizational goals. For more than 30 years researchers have been investigating the effects of transformational and transactional leadership behaviors in organizations (Bass, 1985; 1998; Burns, 1978). Research has demonstrated that transformational leadership has been linked to follower leader satisfaction, follower job satisfaction, follower motivation, rated leader effectiveness, leader job performance, and group or organization performance (Judge & Piccolo, 2004; Judge, Piccolo, & Ilies, 2004). Newer versions of transformational leadership theory include laissez-faire leadership as a third metacategory (Yukl, 2010). This form of leadership can be defined as passive indifference regarding the task and followers (Avolio, 1999). Despite the fact that researchers have learned a considerable amount of information regarding the consequences of transformational, transactional, and laissez-faire leadership, relatively little is known about what precedes such behaviors.

With increased attention paid to effective change management (e.g., Cascio, 1993; Katzenbach et al., 1995), organizations are considering transformational leadership a critical component of influencing such change (e.g.,

Atwater & Bass, 1994; Burke & Litwin, 1992; Worley, Hitchin, & Ross, 1996). This is not surprising considering that transformational leaders articulate a clear and compelling vision, explain how the vision can be attained, express confidence in followers, and use symbolic actions to emphasize key values (Yukl, 2010). Further, this form of leadership is positively associated with employee satisfaction (e.g., Podsakoff, MacKenzie, Moorman, & Fetter, 1990), organizational commitment (e.g., Bycio, Hackett, & Allen, 1995), satisfaction with supervision (e.g., Podsakoff et al., 1990), team performance (e.g., Schaubroeck, Lam, & Cha, 2007), and overall performance (DeGroot, Kiker, & Cross, 2000; Lowe, Kroeck, & Sivasubramaniam, 1996). However, organizations seeking to increase transformational leadership behaviors are forced to rely on scarce empirical support to direct such change efforts. Although there is empirical evidence that personal attributes (i.e., intelligence, warmth, and conformity) account for a moderate amount of the variance in transformational leadership behaviors (Atwater & Yammarino, 1993), the extant leadership literature tends to focus upon inflexible individual attributes. Though this research may be beneficial for selection professionals, it presents difficulties for those tasked with training and developing individuals in current management positions (Bommer, Rubin, & Baldwin, 2004).

In addition to the scarce empirical support regarding antecedents of transformational leadership, organizations have few available references that explain why leaders utilize ineffective behaviors such as passive/avoidant leadership behaviors. Passive or avoidant leaders only engage their followers

when task-related problems or challenges emerge (Bass, 1998), or may be entirely absent at critical junctures of the task (Avolio, 1999). Considering that such behaviors are linked to negative performance outcomes (Judge et al., 2004), more attention should be paid to psychological constructs that influence passive/avoidant behaviors in order to gain a better understanding of why leaders employ such ineffective behaviors.

Ample conceptual space exists to examine malleable individual-difference variables (e.g. state goal orientation) as antecedents of leadership behaviors. As a state, an individual's goal orientation, or cognitive approach to challenging situations, can be influenced by task framing (e.g., Stevens & Gist, 1997), leadership and authority relations (Ames & Archer, 1988), or the nature and focus of evaluation and recognition (e.g., Nicholls, 1984). Researchers have argued that some meso contextual variables (e.g., goals, tasks) have a significant impact on the emergence and/or facilitation of charismatic leadership (Shamir & Howell, 1999). Consistent with Shamir and Howell's findings, leadership behaviors may be unconsciously influenced by contextual cues that evoke specific achievement orientations. Thus, how leaders approach and respond in achievement settings can influence, improve, or modify the frequency and/or display of transformational, transactional, or laissez-faire leadership behaviors.

The Goal Orientation Construct

As defined by Dweck and Leggett (1988), goal orientation is an individual's cognitive framework for approaching and responding to achievement situations. This construct originates from the education literature, which posits

that individuals maintain either a learning or performance orientation towards achievement activities (Dweck, 1989). Dweck (1986) was among the first researchers to assume a social cognitive approach in which she posited that individuals use beliefs and goals to define themselves, and elect either learning goals or performance goals. Individuals that presume that intelligence and performance can be improved through increased effort are likely to adopt learning goals while individuals that presume that intelligence and performance are fixed are likely to adopt performance goals. Based on this social cognitive perspective, learning orientation and performance orientation were initially considered to be at opposite ends of a bi-polar scale since individuals cannot maintain both beliefs regarding intelligence and performance. The factor structure of the goal orientation construct has evolved in the literature from a single bi-polar scale to a four-factor model with independent factors; however, the majority of measures have been based on a two- or three-factor model (Brett & VandeWalle, 1999; Button, Mathieu, & Zajac, 1996; Elliot & McGregor 1999; VandeWalle, 1997). The four factors include mastery-approach, mastery-avoid, performance-approach, and performance-avoid. Individuals with a learning or mastery-approach orientation respond to achievement situations by seeking to acquire and develop competencies in achievement situations, and maintain a focus of incrementally improving. These individuals view failure as an opportunity to learn from their experiences and use mistakes as feedback regarding their performance. Individuals with a mastery-avoid orientation strive to avoid demonstrating loss of competence to one's self. Individuals with a performance-

approach orientation are likely to approach achievement situations by seeking to prove their competence and gain favorable comments from others regarding their performance. Finally, individuals with a performance-avoid orientation strive to avoid disproving their ability. The mastery-approach, performance-approach, and performance-avoid dimensions have been widely researched while the mastery-avoid orientation has received little consideration in the research literature (Payne, Youngcourt, & Beaubien, 2007). Consistent with most researchers, this research uses the three-factor structure of goal orientation.

Trait and State Goal Orientation

Across the goal orientation literature, scholars and researchers posit that the goal orientation construct is both a trait and a state (Button et al., 1996; Colquitt & Simmering, 1998). As a trait, researchers view goal orientation as a stable framework that is similar to a disposition, with regard to how individuals approach achievement situations. Button and colleagues claim that when goal orientation is seen as a trait, an individual's beliefs regarding their ability results in the adoption of a standard goal orientation that directs behavior (Button et al., 1996). As a state, researchers seek to predict specific achievement outcomes by inducing a certain achievement orientation (e.g., Bell & Kozlowski, 2002; Brett & VandeWalle, 1999). Dweck and Leggett (1988) posit that as individuals approach new achievement situations, they search for cues from their environment that influences them to assume a particular goal orientation. This suggests that state goal orientation is malleable and that a person's approach to the task is contingent upon contextual clues or stimuli from the environment. Consistent with Dweck

and Leggett, this research views goal orientation primarily as a state.

Meta-analytic findings from Payne and colleagues suggest that high levels of both trait and state learning and performance-approach orientations are likely to be advantageous to job performance (Payne et al., 2007). Moreover, their findings reveal that learning goal orientation predicted job performance above and beyond cognitive ability and Big Five personality characteristics. This suggests that learning goal orientation is highly indicative of work performance, while performance-approach is a less than moderate predictor of performance outcomes. Moreover, this suggests that as individuals focus on incrementally improving and developing a mastery of the skill, this adaptive strategy leads to an increase in performance. Additionally, Payne and colleagues have found that performance-avoid orientation is linked to lower task and job performance (Payne et al., 2007). This suggests that as individuals attempt to avoid making mistakes and avoid disproving their competence while performing on a task, this maladaptive strategy leads to a decrease in performance.

Leader Goal Orientation

Throughout the goal orientation literature, researchers suggest that authority figures (i.e., organizational leaders, teachers) influence follower motivation and behavior through their explicit and implicit emphasis on a specific achievement goal (e.g., Ames & Archer, 1988; Dragoni, 2005; Dweck, 1986; Dweck & Leggett, 1988). The manner in which leaders interpret, approach, and respond to demanding situations transmits powerful signals to their team members regarding the desired motivational focus. Research has demonstrated that the team

leader's goal orientation is related to a variety of team processes and outcomes including the quality of development process, quality of final product, and interaction within the team (Sonnentag, Frese, Stolte, Heinbokel, & Brodbeck, 1994). However, the directionality of the leader goal orientation-team outcome relationship is heavily dependent on the leader's achievement orientation (Hendricks & Payne, 2007). Authority figures with a learning-approach orientation seek to acquire and develop competencies in achievement situations, and focus on the developmental aspects of feedback for incremental improvement of task performance (Dragoni, 2005). Therefore, leaders that are induced with a learning-approach goal orientation will advise team members to acquire new skills, establish learning goals for the team, and offer feedback that promotes collective efficacy (Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996). Leaders who focus on employee development may apply different management practices to convey their dedication to learning. For instance, they offer time off to participate in developmental activities (Maurer & Tarulli, 1994; Noe & Wilk, 1993) and advise employees to implement newly learned skills on the job (Ford, Quinones, Sego, & Sorra, 1992). During their interactions with team members, such leaders model the importance of learning from mistakes, encourage experimentation with novel work practices, and offer constructive feedback on how to improve performance (Cannon & Edmondson, 2001; Edmondson, 1996). There is empirical evidence that these management practices influence team members to perceive a work climate that values and expects learning (e.g., Kozlowski & Farr, 1988; Kozlowski & Hults, 1987).

Leaders that are induced with a performance-approach orientation will seek to prove their competence and gain favorable comments in achievement settings. Leaders who prioritize the demonstration of ability uphold a competitive model of career progression (Rosenbaum, 1989) in which followers are encouraged to participate in ongoing implicit competitions with one another to gain extrinsic rewards. Such leaders overtly and continuously evaluate employee performance in comparison to other followers and reward those who outperform others. In order to receive more favorable competence appraisals, leaders strongly encourage followers to promote their abilities. The attentional and interactional mechanisms mentioned above have proven to be effective in various contexts (e.g., Scott & Bruce, 1994) and are expected to influence followers' interpretation of their leader's strong emphasis on competition as reflective of a work environment that supports the demonstration of competencies.

Conversely, leaders that are induced with a performance-avoid orientation will seek to avoid failure and avoid disproving their competencies in achievement situations. Authority figures that prioritize the avoidance of failure concentrate on activities that challenge followers' appearance of competence (e.g., group member mistakes and subpar performance). These leaders frequently use corrective action to discourage team members from making future errors and engage in defensive tactics to minimize threats and preserve the image of the work unit (Tedeschi & Norman, 1985). Research has demonstrated that when leaders interact with team members in this manner, team members perceive a

work climate that values the avoidance of committing and admitting mistakes (Edmondson, 1996; Hofmann & Stetzer, 1998).

Transformational Leadership Theories

Burns (1978) summarized the emotional and symbolic aspects of leadership through the theories of transformational leadership. As such, these theories provide an in-depth account of the various behaviors that leaders use to influence followers to subside personal interests in order to accomplish organizational goals and objectives. Transformational leadership is comprised of four components including idealized influence, intellectual stimulation, inspirational motivation, and individualized consideration. The idealized influence component refers to the reverence and admiration that followers hold for leaders, and their desire for them. Followers are able to identify with leaders because leaders are willing to sacrifice their needs for their followers' needs, and take risks for their followers, while maintaining the ethical principles set forth by the organization (Bass, Avolio, Jung, & Berson, 2003). As a result of the leader's courage and dedication, followers develop strong emotions and a personal identification with leader. The intellectual stimulation component refers to a leader's ability to encourage followers to use their talents to be innovative and to think critically about resolving the issue. This component encourages followers to challenge norms and frame problems from new perspectives. The inspirational motivation component refers to leaders ability to motivate followers by explicating the significance of followers work and setting high performance standards. This component enables leaders to vitalize and energize workers to

envision achieving their goals. Moreover, this component serves as one of the main influence processes by increasing followers' awareness of the consistency between their personal interests and values and task objectives (Bono & Judge, 2003). Lastly, the individualized consideration component refers to leaders ability to recognize and attend to their follower's individual needs. This component explains how leaders extend new learning opportunities to followers and are able to foster a climate where followers can mature and develop.

In sum, transformational leaders are expected to enhance the self-efficacy and performance capacity of their followers by setting higher expectations and inspiring a greater willingness to accomplish more difficult tasks. Transformational leaders express a coherent and captivating vision, outline how the vision can be achieved, behave in a confident and reassuring manner, demonstrate confidence in their followers, draw attention to key values by using symbolic actions, and lead by their actions (Yukl, 2010). Expectedly, meta-analytic results have linked transformational leadership with high initial work performance (DeGroot et al., 2000; Lowe et al., 1996), and high long-term work performance (Geyer & Steyrer, 1998; Howell & Avolio, 1993).

Transactional Leadership

Prior to the conceptualization of transformational leadership theory (Bass, 1985; Burns, 1978; House, 1977), most researchers held the view that transactional contingent reinforcement was the key component of effective leadership behavior. Demonstrating transactional leadership meant that subordinates agreed with the leader in exchange for praise, rewards, and resources

or the avoidance of corrective action (Bass et al., 2003). Rewards and recognition were provided only if followers successfully carried out their roles and duties (Podsakoff, Todor, & Skov, 1982). Transactional leadership is comprised of three components including (1) contingent reward, (2) management by exception active (MBEA), and (3) management by exception passive (MBEP). Transactional contingent reward is based on the idea that leaders offer rewards upon satisfactory performance by followers. This component of transactional leadership clarifies expectations and provides recognition upon goal attainment. There is ample empirical evidence that transactional contingent reward style is positively associated with followers' commitment, satisfaction, performance, and organizational citizenship behaviors (Bycio, Hackett, & Allen, 1995; Goodwin, Wofford, & Whittington, 2001; Hunt & Schuler, 1976; Podsakoff, Todor, Grover, & Huber, 1984).

Subsequently, the concept of MBEA is concerned with how leaders actively attend to followers' mistakes and failures to meet standards (Eagly, Johannesen-Schmidt, & van Engen, 2003). According to this style of leadership, the leader explains the standards for compliance, in addition to what is considered ineffective performance and may resort to corrective action for noncompliance. This form of leadership suggests that leaders closely monitor followers' tasks and projects for errors and take disciplinary action as soon as they occur. Unsurprisingly, research has demonstrated a weak but positive association between MBEA and group performance (Judge & Piccolo, 2004).

Additionally, the concept of MBEP is concerned with how leaders wait

until problems become severe before intervening. As such, these passive leaders evade specifying agreements, clarifying expectations, and communicating goals and standards that subordinates must achieve (Bass et al., 2003). Expectedly, this form of leadership has been negatively linked to leader effectiveness (Judge & Piccolo, 2004).

Laissez-faire Leadership

Along with transformational and transactional leadership styles, researchers have identified a laissez-faire style that is viewed as a general failure to take responsibility for managing others. According to Bass and Avolio (1990), laissez-faire leadership is "the absence of leadership, the avoidance of intervention, or both. With Laissez-faire (Avoiding) leadership, there are generally neither transactions nor agreements with followers. Decisions are often delayed; feedback, rewards, and involvement are absent; and there is no attempt to motivate followers or to recognize and satisfy their needs" (p. 20). This style of leadership suggests that laissez-faire leaders fail to meet the legitimate expectations of followers and/or subordinates. Despite the striking resemblance to management by exception—passive leadership, laissez-faire leadership represents a distinct style of leadership because it is the absence of any leadership, and therefore a zero type of leadership (Avolio, 1999; Bass, 1998). Previous research has demonstrated that laissez-faire leadership is associated with poor individual and unit performance (e.g., Bass, 1985; Lowe et al., 1996) and low leader effectiveness ratings (Bass & Avolio, 1994).

Leader Goal Orientation, Leadership, and Team Performance

The notion that leadership behaviors mediate the relationship between leader goal orientation and team performance seems plausible considering that it is consistent with recent literature on the distal and proximal antecedents to leadership effectiveness (Van Iddekinge, Ferris, & Heffner, 2009) — leader behaviors are more proximal to the act of leadership than are individual characteristics. This notion is also consistent with the conceptual and empirical links between individual differences and behaviors that are evident in much of the personality literature (Barrick & Mount, 1993). For instance, considering that conscientious leaders have a preference for orderly rather than spontaneous behavior, they will be more likely to initiate structure in leadership contexts (Humphrey, Hollenbeck, Meyer, & Ilgen, 2007). This suggests that leaders are likely to use behaviors that are consistent with their individual preferences. Similarly, as contextual cues evoke specific achievement orientations, leaders use behaviors that are consistent with those achievement settings.

The Role of Social Information Processing in Mediating Processes

The process by which the leader's goal orientation influences his or her leadership behaviors can be explained by social information processing. Social information processing is founded on the idea that individuals formulate ideas based on information gathered from their surrounding environment, and the behavior of coworkers is a critical component of employees' environments. Salancik and Pfeffer (1978, p. 227) claim that the social context ''focuses an individual's attention on certain information (i.e., de-emphasizing other information), making that information more salient, and provides expectations

concerning individual behavior.'' Consequently, as employees search for meaning to subjective phenomena in the workplace, the immediate environment provides clues as to what information should be weighted heavily and what should be given less importance (Bommer et al., 2004). The way in which leaders interpret, approach, and respond to challenging situations helps to determine what they assign importance to for specific tasks. How the leader interprets and responds to these contextual cues transmits signals to followers regarding the desired motivational focus (Dragoni & Kuenzi, 2012). The conveyance of these signals may even be unconscious on the part of the leader, yet they are influential in shaping leadership behaviors.

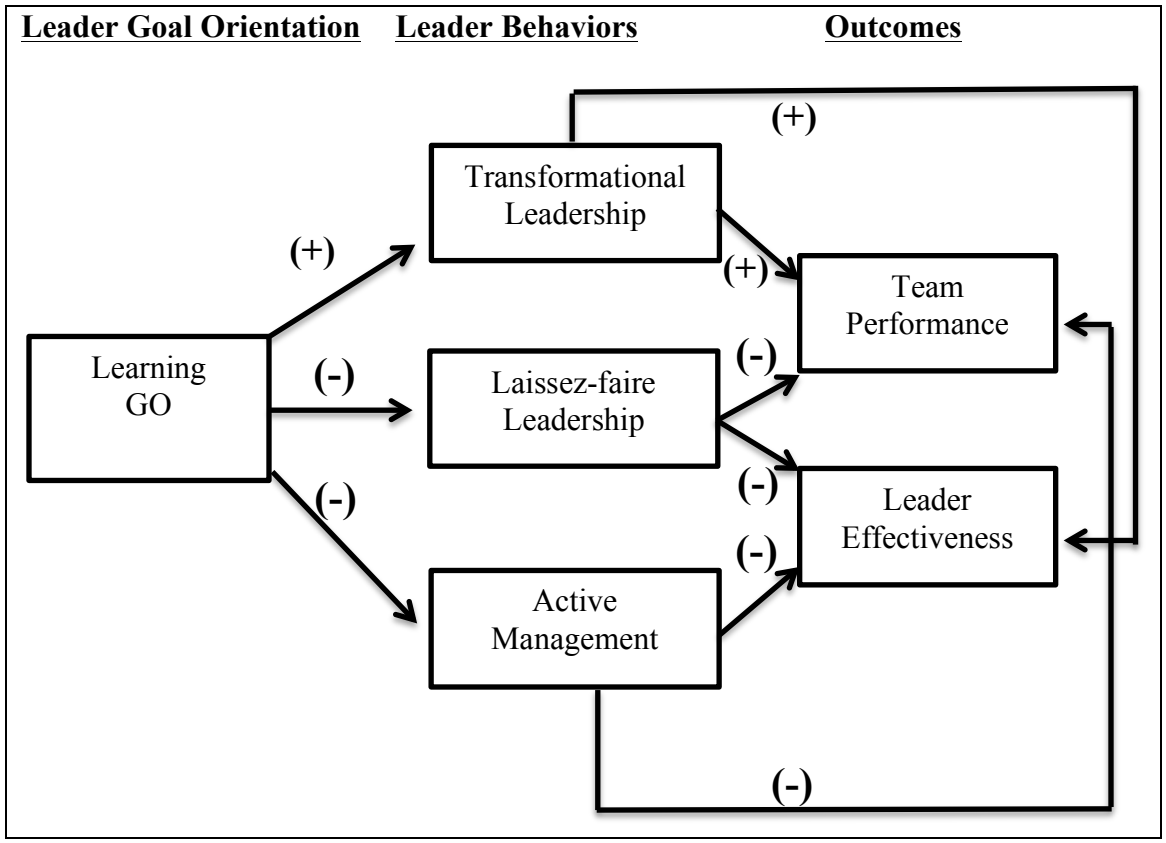
Learning-Oriented Leaders and Transformational Leadership

Leaders that are induced with a learning-approach orientation may openly praise his or her work team for its willingness to experiment and use mistakes as opportunities to improve work processes. Research conducted by Edmondson (2003) revealed that in adopting novel medical technology in interdisciplinary medical teams, a mastery-leader is viewed as having the attitude "let's go out and learn something new; let's try this" (p. 1441). As such, followers are likely to perceive leaders as intellectually stimulating — a key component of transformational leadership. Recent research has demonstrated that transformational leadership is positively associated with an individual's learning goal orientation (Sosik, Godshalk, & Yammarino, 2004). For transformational leadership researchers, this result is expected given that transformational leaders use change-oriented behaviors to view problems from different perspectives

(Dragoni & Kuenzi, 2012).

Moreover, leaders that are induced with a learning-approach orientation will give much consideration to employee development, offer encouragement and constructive feedback on how to improve, and develop resources that simplifies learning for workers (Dragoni, 2005; Dragoni & Kuenzi, 2012). As a result of leaders' focus on follower development, followers are likely to believe that leaders are concerned about their personal development.

Figure 1. Integrated Model of Hypothesized Relationships



Additionally, leaders that are induced with a learning-approach orientation will utilize specific learning goals to motivate and measure progress. They encourage team members to develop new skills and set learning goals for the team. Consequently, followers are likely to feel vitalized and energized to achieve

goals related to task performance.

Further, since learning-oriented leaders place a strong emphasis on employee development and the needs of their followers, they often sacrifice their own personal needs for the needs of others. Thus, followers are likely to develop strong emotions and a personal identification with leaders and are likely to revere and admire them.

As depicted in Figure 1, followers are likely to perceive leaders behaviors as a form of transformational leadership – in turn, these transformational behaviors are expected to facilitate positive perceptions of leader effectiveness among team members as well as improvements in team task performance.

Avoidant-Leaders and Active Management

An avoidant leader may tightly monitor the team's activities to identify when members fail to meet performance standards, scold the team for performance problems, and shift blame to external circumstances to protect the team's reputation (Dragoni, 2005). Avoidant leaders give much consideration to mistakes and subpar performance, utilize punishment for mistakes as main source of feedback, promote use of impression management to preserve image when competence is threatened, devote time to actively managing impressions, reward infrequently —when done, they reward for not making errors, and delegates tasks to those who will not fail (Dragoni, 2005; Dragoni & Kuenzi, 2012). Considering their approach to achievement situations, followers will perceive avoidant leaders behaviors to be a form of active management, which in turn should negatively impact team task performance and team members' perceptions of leader

effectiveness.

Avoidant-Leaders and Laissez-faire Style

Avoidant leaders may also be absent when needed by followers and/or subordinates, avoid making decisions, and fail to respond to urgent situations. Considering the lack of involvement and motivation of followers by avoidant leaders, followers are likely to perceive such behavior as laissez-faire leadership, which in turn should lead to a decrement in performance and negative perceptions of leader effectiveness among team members.

Rationale

With this current investigation, two primary contributions are made to the leadership literature. First, this research adds to our sparse understanding of why some leaders engage in transformational leadership behaviors while others engage in ineffective leadership behaviors. Of the studies that examine antecedents of transformational leadership, most focus on aspects of personality (e.g., Atwater & Yammarino, 1993; Rubin, Munz, & Bommer, 2005), rather than malleable individual-level variables such as state goal orientation. Given that this research examined how leaders can be induced with specific achievement orientations that facilitate transformational leadership behaviors, this research serves as a potential guide to leadership training and development professionals on how to increase the frequency of transformational and transactional leadership behaviors in dyads and teams, as well as modify and/or decrease avoidant leadership behaviors.

Secondly, although there is an abundance of research that examines the effects of individuals' goal orientation on individual-level performance outcomes (e.g., Cellar et al., 2011; Kozlowski et al., 2001; Payne et al., 2007), this is one of few studies that examines the effects of the leader's goal orientation on team outcomes (Dierdorff & Ellington, 2012). Considering the strong positive relationship between goal orientation and performance outcomes at the individual level, how a leader interprets and responds to achievement settings should have major implications for how the team interacts and performs. This study adds to this literature by examining transformational leadership behaviors as a mechanism through which a leader's focus impacts important team outcomes.

Statement of Hypotheses

Hypothesis Ia. Teams with leaders in the learning-approach condition will have higher team performance and than teams with leaders in the performance-avoid condition.

Hypothesis Ib. Teams with leaders in the learning-approach condition will have higher team ratings of leader effectiveness and than teams with leaders in the performance-avoid condition.

Hypothesis IIa. Leader learning-approach goal orientation will be positively related to team performance through transformational leadership.

Hypothesis IIb. Leader learning-approach goal orientation will be positively related to team ratings of leader effectiveness through transformational leadership.

Hypothesis IIIa. Leader performance-avoid goal orientation will be negatively related to team performance through active management by exception.

Hypothesis IIIb. Leader performance-avoid goal orientation will be negatively related to team ratings of leader effectiveness through active management by exception.

Hypothesis IIIc. Leader performance-avoid goal orientation will be negatively related to team performance through laissez-faire leadership.

Hypothesis IIId. Leader performance-avoid goal orientation will be negatively related to team ratings of leader effectiveness through laissez-faire leadership.

METHOD

Participant and Task Description

This study was conducted in a laboratory setting, using 121 undergraduate students enrolled in undergraduate psychology classes at a large midwestern university. Participants ranged in age from 18 to 46 (M = 19.93, SD = 3.52) and the number of male participants differed from the number of female participants (55% female). The majority of participants were Caucasian (58%), with Hispanic individuals being the second largest subgroup represented (16%). While some students were recruited through interdepartmental communications to undergraduate psychology instructors, students who participated in this experiment were primarily recruited through the psychology department subject pool and received partial course credit – team leaders received 2.5 credits and team members received 2 credits. Additionally, all who participated in this study were eligible for the chance to win a $100 gift card.

Data were collected from 49 dyads/teams, with each team consisting of 1 leader and 1 to 2 team members. Leaders and team members were assigned to a team based on scheduling availability, and were not presented the opportunity to interact with each other prior to the experiment. Given that leaders were required to arrive 45 minutes early for the experiment to be pretrained on the task, participants who signed up for the longer time slot were selected for this role. Neither leaders nor team members were given specific knowledge of the task they were to complete prior to the experiment. Participants completed an experimental task titled “The Manufacturing Game” (Hendricks & Payne, 2007; Kane et al.,

2002; Zaccaro, Foti, & Kenny, 1991) in two- and three-person teams. Each team was assigned the task of building products and selling them for profit. The primary goal of the game was to maximize team profit by buying products at lower prices and selling at higher prices, as the market prices fluctuated during the task. The products were built using LEGO® blocks, and the design of the three products were provided for participants in two- and three-dimensional formats. Respectively, the task was slightly additive in that performance represented the sum of each team member's individual contribution, though leaders' contributions were somewhat different than team members' contributions. Only team members were allowed to build products, which imposed a certain degree of interdependence between the leader and the team members. The leader was able to place orders and sell products, but he or she was not able to build any products. Based on extant team typologies, the teams in this study could be categorized as hierarchical production teams (Hackman, 1990; LePine, Hollenbeck, Ilgen, & Hedlund, 1997).

Procedure

Five hypothesis-blind research assistants were trained to follow an experimental protocol and assisted in data collection. These research assistants were not presented with the opportunity to interact with study participants prior to the experiment. Upon pilot testing the experiment, it was determined that only 1 team and 2 experimenters would be present at each session. The leaders were required to arrive to the isolated laboratory 45 minutes prior to the other participants in order to be pretrained on the task. Upon arrival, leaders completed

an informed consent form, a measure of trait goal orientation and personality. These measures were separate from the prescreening phase. Subsequently, the leader was handed a set of instructions on how to complete The Manufacturing Game. In addition to instructions, participants were given an ordering form, market prices, a calculator, and visuals of products. Independent from the team, the leader was given 5 minutes to prepare for the task and 15 minutes of production time. An experimenter issued supplies and purchased completed products at the specified market price, which changed every 5 minutes. Upon pilot testing this experiment with several teams, it was determined that these times used in previous experiments "The Manufacturing Game" (Hendricks & Payne, 2007; Kane et al., 2002; Zaccaro, Foti, & Kenny, 1991) were also appropriate for this study. Final products had to be built precisely as displayed in the model. If the products were not built precisely as displayed in the model, they were rejected and returned for "repairs." The leader's profit on the task (i.e., total amount earned in sales subtracted from the total amount spent in orders) was captured as a covariate.

Upon task completion, the leader watched an instructional video on how to approach the task as team leader. The video was developed using a professional actor from the theatre school of the university and three undergraduate students. The video displayed an actor communicating information regarding team leader task instructions (e.g., make sure you give constructive feedback to team members who make mistakes), a leader demonstrating the actual behavior (e.g., providing constructive feedback to students) and two team members reacting to the leader's

behaviors. This way, team leaders had a concrete visual example to accompany their instructions on how they should lead their teams. Depending on the experimental condition, the leader watched a video that was designed to induce a learning-approach or performance-avoid orientation. Instructions framed with a learning-approach orientation (see video script; Appendix M) encouraged leaders to emphasize continual learning and the development of new skills by their members (e.g., Kozlowski & Hults, 1987). Instructions framed with a performance-avoid orientation (see video script; Appendix N) encouraged leaders to encourage team members to avoid demonstrating incompetence. These two operationalizations of leader goal orientation are consistent with previous research on leader goal orientation (e.g., Dragoni, 2005). For the intent purposes of this study, I focused strictly on learning-approach and performance-avoid orientation; performance-approach goal orientation was not manipulated. To ensure that team leaders understood the information communicated each video, participants were extended the opportunity to ask clarifying questions upon its conclusion. Participants were randomly assigned to one of the two conditions prior to arrival.

Subsequently, team members arrived to the same laboratory as the leader 45 minutes later to complete the activity as a team. Similar to leaders, team members completed the informed consent form, trait-goal orientation measure, and personality measure upon arrival. Next, the team was informed that they would be participating in The Manufacturing Game as a team and were introduced to their assigned leader. The leader was responsible for communicating the instructions to her or his team members.

Each leader was allotted 10 minutes to explain the task to his or her team and plan for production, followed by 20 minutes to build products. A video camera was used to capture actual leadership behaviors throughout this 30-minute period. The camera was turned on after study materials were distributed to the team, but before the team began planning. The team began the game with $10,000 to purchase materials and was not allowed to exceed the $10,000 "debt", however, the team was able to use additional revenue to purchase more raw materials. If the team over-spent at any point, the team was penalized 15% of its profits at the end of the game. As mentioned previously, the market buying and selling prices fluctuated every 5 minutes during the 20-minute performance period. The leader was given a hard copy of the changes in market prices prior to completing the task (See Appendix K). The team leader was also instructed that he or she could not physically build any of the products during this time period. Both the leader and team members were allowed to ask the experimenter for time checks throughout the 20-minute period, however, they were not allowed to wear a watch or use any device that gives the time in order to ensure standardization of resources across all participants. As mentioned previously, raw materials were purchased using an order form and erroneous products were sent back for "repairs." Once the time period expired, the video camera was turned off and team members then completed the demographic questionnaire, state goal orientation, Multifactor Leadership Questionnaire, and leadership effectiveness measure, however, the leader only completed the demographic questionnaire and manipulation check. All participants completed measures simultaneously but

independently. Prior to dismissal, leaders read a debriefing statement that explained the purpose of the experiment and provided sources to consult for additional information about the study. Using a Qualtrics survey link unlinked to participants' study data, participants provided their email address to be contacted for the gift card raffle. Team profit was computed by subtracting the money spent on raw materials from total revenue. The experimenter used a designated sheet to log all transactions (See Appendix J).

Measures

Leadership Behaviors. Leader behaviors were assessed using the Multifactor Leadership Questionnaire Form 5X (MLQ–5X; Avolio & Bass, 2002). This instrument measures transformational leadership by five subscales, transactional leadership by three subscales, and laissez-faire leadership on a single scale. Four items represented each of the nine resulting measures (See Appendix B for complete scale). A 5-point rating scale (0 = Not at all, 4 = Frequently, if not always) was used as the response format for each of the items. Sample items include "Instills pride in me for being associated with him/her" (idealized influence attribute; $\alpha = .88$); "Talks about his/her most important values and beliefs" (idealized influence behavior; $\alpha = .76$); "Talks optimistically about the future" (inspirational motivation; $\alpha = .84$); "Re-examines critical assumptions to question whether they are appropriate" (intellectual stimulation; $\alpha = .83$); "Spends time in teaching and coaching" (individualized consideration; $\alpha = .75$); "Provides me with assistance in exchange for my efforts" (contingent reward; $\alpha = .83$); "Focuses attention on irregularities, mistakes, exceptions, and deviations from

standards" (active management by exception; α = .74); "Fails to interfere until problems become serious" (passive management by exception; α = .63); "Avoids getting involved when important issues arise" (laissez-faire; α = .66).

Past research has indicated that the correlations between the four transformational leadership dimensions (i.e., individualized consideration, idealized attributes, inspirational motivation, intellectual stimulations) are strongly related (Chi & Pan, 2012; Liao & Chuang, 2007). In the current study, there also was a high degree of shared variance between the four dimensions (r = .73-.83; $p < .001$). Following past research (Chi & Huang, 2014) these dimensions were combined to form an overall transformational leadership score (α = .95). In order to determine the suitability of aggregating individual ratings of transformational leadership to the team level, the within-group agreement of team members' ratings were tested (see Data Aggregation section).

Team Performance. Team performance was operationalized as the overall profit level of the team.

Team Ratings of Leader Effectiveness. Team leader effectiveness was assessed using a 7-point Likert-type scale (1 = Strongly disagree, 7 = Strongly agree; α = .95). Each team member rated his or her team's leader effectiveness using a modified version of Giessner & van Knippenberg (2008)'s 6-item measure; however, the measure that was used in the experiment included four additional items so that team members could rate leaders on specific aspects of the experimental task (See Appendix E for complete scale). A sample item is, "This team leader is very effective."

State Goal Orientation. Individuals' state level goal orientation was assessed using 16-items developed by VandeWalle (1997). Sample items include "I was concerned with improving my ability during the task" (learning-approach; α = .80); "I tried to figure out what it takes to prove my ability to others during the task" (performance-approach; α = .74); "I avoided aspects of the task if there was a chance that I would appear rather incompetent to others" (performance-avoid; α = .81). A 5-point Likert-type scale (1 = Strongly disagree, 5 = Strongly agree) will be used as the response format for each of the items (See Appendix C for complete scale).

Demographics. Participant background information (e.g., age, gender, leadership experience) was collected using a 9-item demographic questionnaire (See Appendix F for complete measure). A sample question is, "Have you had opportunities to lead groups in the past?"

Controls. In order to control for trait goal orientation in study analyses, trait learning and performance orientations were assessed using 16-items developed by VandeWalle (1997). Sample items include "I often look for opportunities to develop new skills and knowledge" (learning-approach; α = .81); "I'm concerned with showing that I can perform better than my classmates" (performance-approach; α = .69); "I'm concerned about taking on a task at school if my performance would reveal that I had low ability" (performance-avoid α = .81). A 5-point Likert-type scale (1 = Strongly disagree, 5 = Strongly agree) will be used as the response format for each of the items (See Appendix C for complete scale).

In order to control for personality in study analyses, personality was assessed using Saucier's (1994)'s 40-item Mini-Markers Set. This instrument measures five dimensions of personality using 8 items per dimension. Sample items include "Energetic" (extraversion; $\alpha = .85$); "Organized" (conscientiousness; $\alpha = .77$); "Kind" (agreeableness; $\alpha = .74$); "Imaginative" (openness to experience; $\alpha = .79$); "Moody" (emotional stability; $\alpha = .61$). A 5-point Likert-type scale (1 = Very inaccurate, 5 = Very accurate) will be used as the response format for each of the items (See Appendix D for complete scale). In addition, leaders' pretraining task performance and gender were taken into account when conducting analyses, along with team size.

Results

Manipulation check

Table 2 presents the results from the manipulation check. An independent t-test was performed to test for differences in leaders' responses to VandeWalle's (1997) state goal orientation measure across the two experimental conditions. In order for the manipulation to be considered successful, there needs to be significant mean differences on the state learning-approach goal orientation measure and state performance-avoid goal orientation measure across the study conditions, such that leaders in the learning-approach condition score significantly higher on the learning-approach measure than leaders in the performance-avoid condition, and leaders in the performance-avoid condition score significantly higher on the performance-avoid measure than leaders in the learning-approach condition. Results revealed that there were significant mean differences between

leaders in the learning-approach condition and performance-avoid condition for the state learning goal orientation measure, $t(47) = 2.18$, $p < .05$. It was also determined that there were significant mean differences between leaders in the learning-approach condition and performance-avoid condition for the state performance-avoid measure, $t(47) = -2.11$, $p < .05$. Taken together, these results demonstrate that leaders from the two experimental conditions differed on achievement orientation.

Table 1.

Sample Size for Leaders and Team Members Across Learning and Avoidant Leader Conditions

	Learning	Avoidant	Row Total
Leader	$n = 24$	$n = 25$	$n = 49$
Team	$n = 35$	$n = 37$	$n = 72$
Column Total	$n = 59$	$n = 62$	$N = 121$

Table 2.

Manipulation Check: Means and Standard Deviations of Leaders' State GOs Across Learning and Avoidant Leader Conditions

	Learning	Avoidant	t	sig
Ldr SLGO	3.79 (.54)	3.35 (.85)	2.18	.03*
Ldr SPAGO	2.36 (.64)	2.77 (.71)	-2.11	.04*

Note. $N = 49$. Ldr SLGO = Leader State Learning-Approach Goal Orientation; Ldr PAGO = Leader State Performance-Avoid Goal Orientation. * $p < .05$ (2-tailed).

Confirmatory Factor Analysis Results

Confirmatory factor analyses of the study variables were conducted to test the proposed structure. First, the fit of a single factor model of leader effectiveness was assessed. The results show that the proposed model demonstrated acceptable fit, χ^2 (98.65); CFI = .96, NFI = .95, IFI = .96, SRMR = .04. Although the chi-square value is significant, the critical *N* value suggests that the unfavorable value may be a result of a large sample size (*N* = 121) relative to the number of items assessed (10-item measure). Next, a 3-factor model of state goal orientation was assessed. The results revealed that the 3-factor model demonstrated acceptable fit as well, χ^2 (117.11); CFI = .98, NFI = .90, IFI = .98, SRMR = .07. The study sample size was insufficient to accurately estimate parameters for the 36-item MLQ, thus, a confirmatory factor analysis was not conducted for the measure.

Table 3

Fit Indexes Among Models

Models	Critical *N*	χ^2	df	CFI	NFI	IFI	SRMR	RMSEA
State GO	138.97	117.11	99	.98	.90	.98	.07	.04
Leader Effectiveness	42.27	98.68*	35	.96	.94	.96	.04	.02

Note. * $p < .05$.

Data Aggregation

In order to determine appropriateness of data aggregation for the transformational leadership, active management, laissez-faire leadership, and leader effectiveness measures, I calculated the inter-rater agreement (rwg), and

intra-class correlation coefficient, ICC(1) for these variables (Bliese, 2000; James, Demaree, & Wolf, 1984). The ICC(1) values for transformational leadership, active management, laissez-faire leadership, and leader effectiveness were acceptable .55, .39, .35, and .70 (F values ranged from 2.38-24.00, all *p*s < .05), respectively. Values close to 0 indicate that the proportion of between-group variance to total group variance provide insufficient evidence to aggregate individual measures to the team level; the aforementioned values indicate that sufficient between-group variance exists for all study variables (Bliese, 2000). The results show that the mean rwg values for transformational leadership, active management, laissez-faire leadership, and leader effectiveness were, .44, .33, .39, and .64. Chen and Bliese (2002) proposed that data aggregation should be supported by high rwg values and a significant between-group variance, as indicated by ICC(1) values. Although the rwg values were poor, the ICC values indicated significant between-group variance. Based on these suggestions, team members' responses to the aforementioned measures were aggregated to the team level.

Analytical Strategy

Two independent samples t-tests were used to examine the effects of leader state goal orientation on team outcomes, first on team profit and subsequently on team ratings of leader effectiveness. Levene's Test for Equality of Variances was used to test if the variability of each group was approximately equal. I followed Preacher and Hayes (2008) to examine the mediating effects of transformational leadership, active management, and laissez-faire leadership on leader goal

orientation and team performance as well as team ratings of leader effectiveness. This particular approach to mediation has two advantages over traditional methods of testing mediation (e.g., Baron & Kenny, 1986), with the first being that multiple mediating variables can be assessed simultaneously without necessarily influencing each other. Additionally, bootstrapping methods can be utilized to produce confidence intervals for estimates of the product of a and b model coefficients for the mediated or indirect effect, which makes any violations of normality less problematic (Warner & Vroman, 2011). Two separate regression models were tested in which all mediating variables (i.e., laissez-faire leadership, transformational leadership, active management) were tested in parallel, uninfluenced by one other. A one-tailed test was used to compute the statistical significance for all hypothesis testing. Using a one-tailed test is appropriate given the fact that I have directional hypotheses. Such tests provide more power to detect an effect and are especially beneficial when study sample sizes are small. A power analysis was conducted using the software package, GPower (Faul & Erdfelder, 1992). Results from the power analysis revealed that the statistical power for this study was .17 for detecting a small effect, .53 for detecting a medium size effect, and .87 for detecting a large effect; recommended effect sizes used for this test were as follows: small (d = .20), medium (d = .50), and large (d = .80) (see Cohen,1992). An alpha level of .05 was used for this analysis. Means, standard deviations, and correlations among the study variables are in Table 4 (leaders) and Table 5 (team members).

Table 4

Descriptive Statistics and Intercorrelations of Variables for Leaders Only

Variable		M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Ldr Cond	1.48	.51	-										
2	Ldr Gender	1.58	.50	.22	-									
3	Ldr TLGO	3.71	.56	.16	.18	(.81)								
4	Ldr TPPGO	3.36	.54	-.07	.09	.02	(.69)							
5	Ldr TPAGO	2.93	.79	-.04	.25	-.28	.54	(.81)						
6	Ldr Extra	3.36	.66	.27	.32	.22	-.10	-.21	(.85)					
7	Ldr Agree	4.11	.51	.13	-.10	-.06	.03	.04	.18	(.74)				
8	Ldr Open	3.72	.61	.19	-.14	.12	-.12	-.19	.10	.29	(.79)			
9	Ldr Consc	3.82	.63	.29	.33	.49	.06	-.16	.30	.39	-.03	(.77)		
10	Ldr Emot	3.42	.52	.09	.11	.22	-.25	-.35	.33	.28	.12	.49	(.62)	
11	Ldr Orders	7764.98	4014.68	-.15	-.29	-.17	-.03	.01	.02	.02	.16	-.32	-.19	-
12	Ldr Sales	7874.29	5722.19	-.34	-.34	-.06	-.17	-.03	-.10	-.10	.04	-.29	-.25	.6
13	Ldr Profit	109.31	4509.05	-.06	-.18	.06	-.19	-.05	-.14	-.14	-.09	-.09	-.16	-.1

Note: N = 49. All measures were on a 5-point rating scale. Correlations greater than or equal to |.29|, $p \leq .05$, correlations greater than or equal to |.38|, $p \leq .01$ (2-tailed). Ldr Cond = (1 = Leader State Performance-Avoid Condition, 2 = Leader State Learning-Approach Condition); Ldr Gender = (1 = Male, 2 = Female); Ldr TLGO =Leader Trait Learning-Approach Goal Orientation; Ldr TPPGO =Leader Trait Performance-Approach Goal Orientation; Ldr TPAGO =Leader Trait Performance-Avoid Goal Orientation; Ldr Extra = Leader Extraversion; Ldr Agree = Leader Agreeableness; Ldr Open = Leader Openness to Experience; Ldr Consc = Leader Conscientiousness; Ldr Emot = Leader Emotional Stability. Cronbach's alpha coefficients are presented along the diagonal.

Table 5.

Descriptive Statistics and Intercorrelations of Variables for Team Members (Aggregated)

Variable		M	SD	1	2	3	4	5	6	7	8	9	10	11	1
1	Ldr Cond	1.48	.51	-											
2	Team Size	2.47	.50	-.02	-										
3	SLGO	3.64	.40	.28	.23	(.80)									
4	SPPGO	3.23	.47	-.06	.18	.14	(.74)								
5	SPAGO	2.52	.54	-.23	-.08	-.15	.50	(.81)							
6	MBEP	2.18	.91	-.10	.37	.09	.50	.43	(.63)						
7	LZ	1.61	.58	-.05	.32	.21	.27	.19	.71	(.66)					
8	TFL	13.04	6.67	.23	-.05	-.12	.14	.07	-.07	-.09	(.95)				
9	CR	3.69	.96	.21	.06	-.01	.18	.05	.33	.06	.86	(.83)			
10	MBEA	3.05	1.05	.02	.23	-.13	.31	.24	.30	.10	.51	.54	(.74)		
11	Team Orders	17972.24	8143.89	-.12	.30	-.01	-.15	.03	-.10	-.16	-.02	.10	-.02	-	
12	Team Sales	31082.65	16413.94	-.08	.17	-.03	-.13	.03	-.10	-.16	-.03	.05	-.07	.77	
13	Team Profit	12535.88	10810.33	-.05	-.01	-.06	-.10	.01	-.10	-.11	-.03	-.01	-.09	.36	.8
14	Ldr Effect	.51	.23	.14	-.19	-.26	-.10	-.14	-.29	-.30	.68	.59	.38	.11	.1

Note: N = 49 teams. All measures were on a 5-point rating scale with the exception of the team leader effectiveness measure, which used a 7-point rating scale. Correlations greater than or equal to |.29|, $p \leq .05$, correlations greater than or equal to |.39|, $p \leq .01$ (2-tailed). Ldr Cond = (1 = Team Leader Performance-Avoid Condition, 2 = Team Leader Learning-Approach Condition); SLGO =Team State Learning-Approach Goal Orientation; SPPGO =Team State Performance-Approach Goal Orientation; SPAGO =Team State Performance-Avoid Goal Orientation; MBEP = Team Ratings of Management by Exception (Passive); LZ = Team Ratings of Laissez-faire Leadership; TFL = Team Ratings of Transformational Leadership Behaviors; CR = Team Ratings of Contingent Reward; MBEA = Team Ratings of Management by Exception (Active); Ldr Effect = Team Ratings of Leader Effectiveness. Cronbach's alpha coefficients are presented along the diagonal.

Main Effects

An independent t-test was performed to test for significant mean differences in team performance and team ratings of leader effectiveness across the two experimental conditions. As displayed in Table 6, there were not any significant mean differences in team performance across the leader learning-approach and performance-avoid condition, $t(47) = -.37$, $p = .64$. It was determined that there were significant mean differences in team ratings of leader effectiveness across the leader learning-approach and performance-avoid condition, $t(47) = 1.97$, $p < .05$. However, Levene's Test for Equality of Variances was violated, $F(1, 47) = 12.47$, $p < .001$. Such findings suggest that the differences in team ratings of leader effectiveness may not be a direct result of the experimental manipulation, rather a consequence of unequal variances across conditions. Stated differently, rejecting the null hypothesis when there are unequal variances across study conditions can lead to erroneous conclusions regarding support of study hypotheses (i.e., committing a Type I error; Field, 2005). A histogram plot of team ratings of leader effectiveness revealed that the variable was negatively skewed and did not follow a normal distribution. In an attempt to adjust for this violation, a reverse score transformation was conducted to correct the negatively skewed data. Each score was subtracted from the highest score obtained plus 1. By doing so, the scores shifted to more closely resemble a normal distribution. Upon conducting this transformation, Levene's Test became nonsignificant, $F(1, 47) = 1.95$, $p = .24$, and the effect of leader state goal orientation on leader effectiveness also became nonsignificant, $t(47) = 1.00$, $p =$

.16. The transformed leader effectiveness variable was used in all subsequent analyses. In total, the leader's goal orientation did not significantly impact ratings of leader effectiveness or team performance.

Table 6.

Main Effects: Means and Standard Deviations of Dependent Variables Across Learning and Avoidant Leader Conditions

	Learning	Avoidant	t	sig
Team Profit	11952.33 (9502.96)	13096.08 (12104.36)	-.37	.64
Ldr Effectiveness	.54 (.20)	.48 (.24)	.86	.16

Note. $N = 49$. * $p < .05$ (1-tailed). Ldr Effectiveness = Team Ratings of Leader Effectiveness

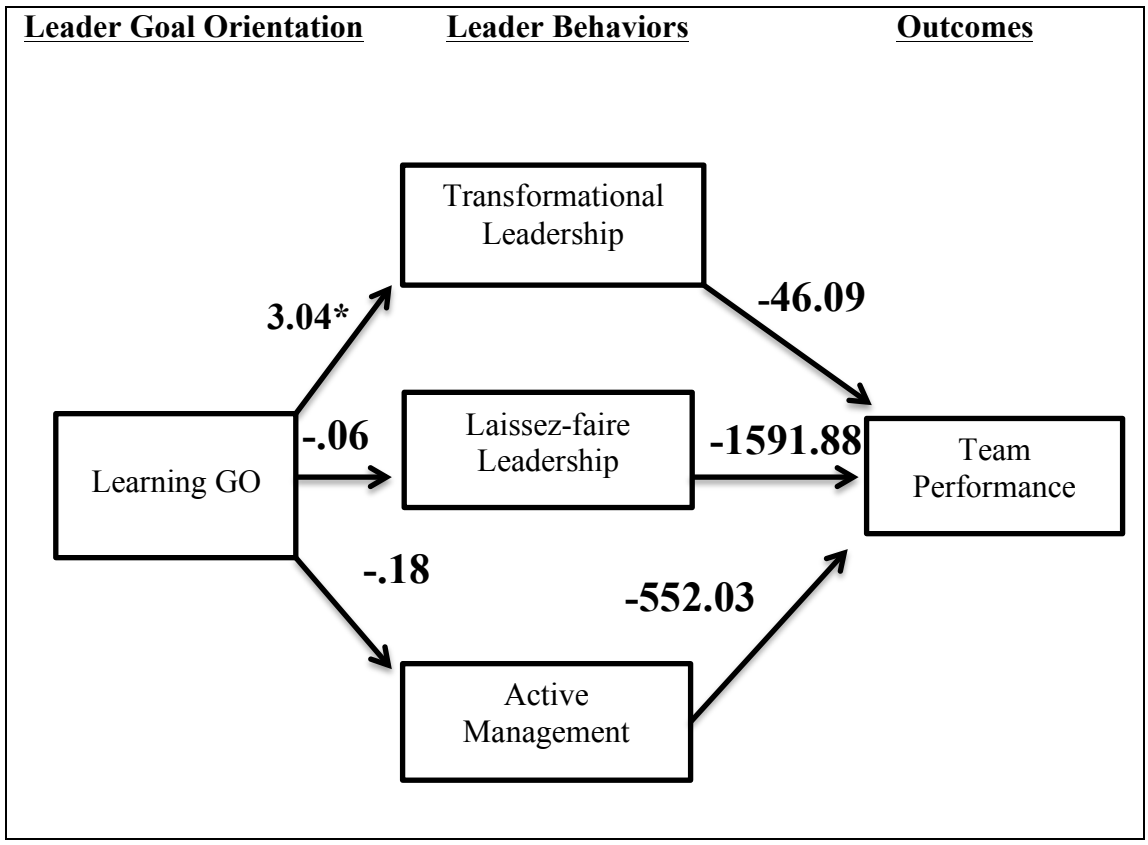
Mediating Effects

An SPSS macro developed by Preacher and Hayes (2008) was used to estimate direct and indirect effects of leader state goal orientation on team performance with the three leadership behaviors (transformational leadership, active management, laissez-faire leadership) as mediating variables operating in parallel (i.e., not affecting each other). The significance tests for each of the mediated effects of leader state goal orientation on team performance were obtained, in addition to bootstrapped estimates for 90% confidence intervals (for bootstrapping, z = 1,000 samples were requested for both mediation analyses).

Prior to hypothesis testing, leadership behaviors were tested for normality

and equality of variances. Levene's Test revealed that the transformational leadership composite violated the homogeneity of variance assumption, F (1, 47) = 4.91, $p < .05$. Upon conducting a square root transformation, Levene's Test became nonsignificant, F (1, 47) = 1.74, $p = .19$; the transformed composite measure was used in all subsequent analyses. In the first regression model, the dependent variable was team profit and the mediating variables were transformational leadership, active management, and laissez-faire leadership. Unstandardized coefficients for all of the paths in this model appear in Figure 2. The total r-squared for prediction of team profit from leader state goal orientation and the three leadership behaviors was .02. None of the coefficients in Table 7 and Figure 2 were statistically significant, with the exception of the path from leader state goal orientation to transformational leadership, (b = 3.04, SE = 1.88, p = .05), indicating that leader state goal orientation predicted perceptions of transformational leadership. The positive path coefficient suggests that leaders in the learning-approach condition were more likely to be seen as more transformational than avoidant leaders. The indirect effect of leader state goal orientation on team performance was also nonsignificant. These results suggest that leader state goal orientation influences perceptions of transformational leadership; however, active management, transformational leadership, and laissez-faire leadership do not mediate the leader goal orientation-team performance relationship.

Figure 2. Mediating Effects of Leadership Behaviors on Leader GO and Team Performance



Note. * $p < .05$ (1-tailed).

In the second regression model, the dependent variable was team ratings of leader effectiveness and the mediating variables were transformational leadership, active management, and laissez-faire leadership. Unstandardized coefficients for all of the paths in this model appear in Figure 3 and Table 8. The total r-squared for prediction of team profit from leader state goal orientation and the three leadership behaviors was .13. In addition to the significant path from leader state goal orientation to transformational leadership ($b = 2.03$, $SE = 1.88$, $p = .05$), the path from transformational leadership to leader effectiveness ($b = .02$, $SE = .01$ $p < .001$) was also significant. The positive path coefficient for transformational

leadership suggests that transformational leadership positively predicts leader effectiveness. The indirect effect of leader state goal orientation on leader effectiveness was nonsignificant. These results suggest that leader state goal orientation influences perceptions of transformational leadership; transformational leadership positively influences leader effectiveness; laissez-faire leadership and active management do not significantly predict leader effectiveness.

Table 7

Mediation Analysis Predicting Team Performance Through Leadership Behaviors

Models	*b*	*SE*	R^2
Outcome: Transformational Leadership			.05*
Team Leader Condition	3.04*	1.87	
Outcome: Laissez-faire Leadership			.00
Team Leader Condition	-.06	.17	
Outcome: Active Management			.01
Team Leader Condition	-.18	.26	
Outcome: Team Performance			.02
Transformational Leadership	-46.09	249.63	
Laissez-faire Leadership	-1591.88	3961.74	
Active Management	-552.03	2552.14	
Team Leader Condition	-1185.29	3302.07	

Note * $p < .05$; ** $p < .01$; *** $p < .001$ (1-tailed). Unstandardized regression coefficient = *b*, Standard Error =*SE*; Team Leader Condition = (1 = Team Leader Performance-Avoid Condition, 2 = Team Leader Learning-Approach Condition).

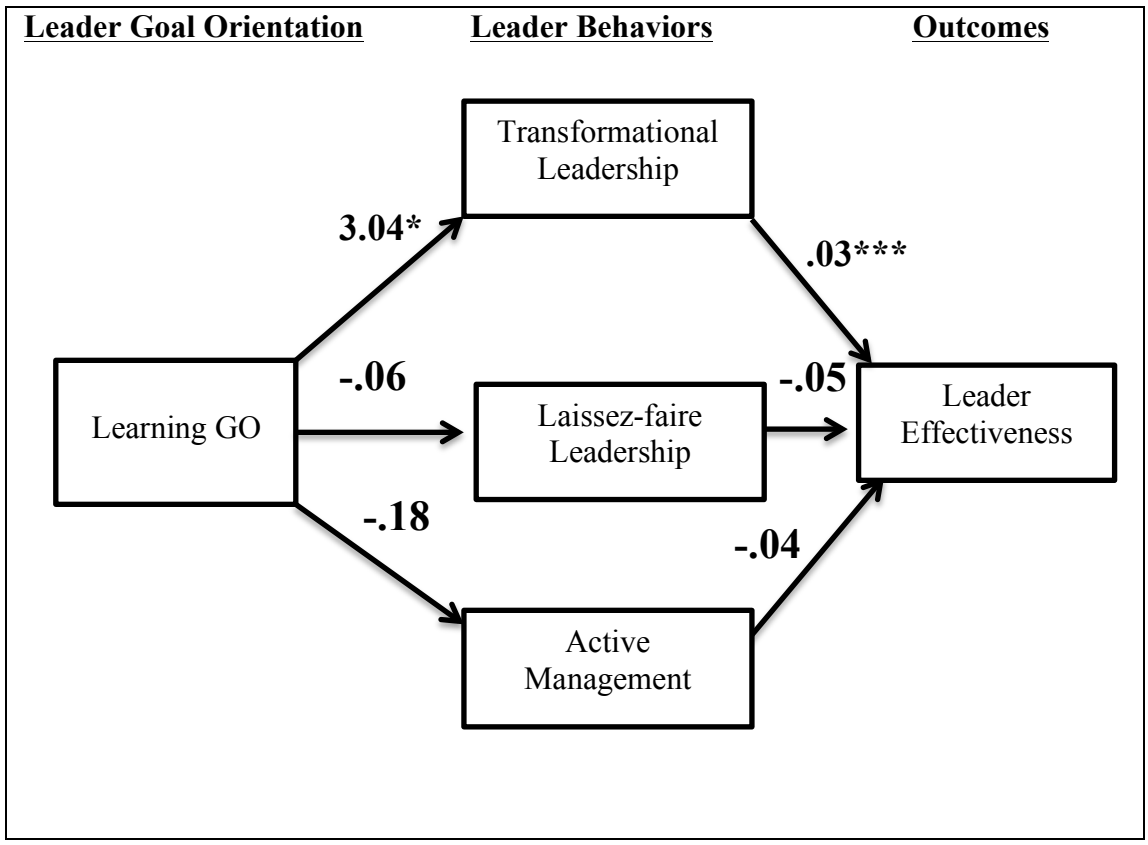
Table 8

Mediation Analysis Predicting Leader Effectiveness Through Leadership Behaviors

Models	*b*	*SE*	R^2
Outcome: Transformational Leadership			.05*
Team Leader Condition	3.04*	1.87	
Outcome: Laissez-faire Leadership			.00
Team Leader Condition	-.06	.17	
Outcome: Active Management			.01
Team Leader Condition	-.18	.26	
Outcome: Team Ratings of Leader Effectiveness			.14***
Transformational Leadership	.03***	.01	
Laissez-faire Leadership	-.05	.06	
Active Management	-.04	.03	
Team Leader Condition	-.01	.05	

Note * $p < .05$; ** $p < .01$; *** $p < .001$ (1-tailed). Unstandardized regression coefficient = *b*, Standard Error =*SE*; Team Leader Condition = (1 = Team Leader Performance-Avoid Condition, 2 = Team Leader Learning-Approach Condition).

Figure 3. Mediating Effects of Leadership Behaviors on Leader GO and Effectiveness



Note. $p < .05$; ***$p < .001$ (1-tailed).

Discussion

The purpose of this investigation was to gain further insight into the antecedents of transformational leadership behaviors by examining the effects of leaders' state goal orientation on transformational leadership behaviors and team outcomes. The results of the study suggest that leader state goal orientation predicts perceptions of transformational leadership behaviors, such that leaders who emphasize continual learning, and encourage learning from failure are more likely to be seen as transformational by team members. In contrast to learning-oriented leaders, avoidant leaders who emphasize avoidance of mistakes and utilize punishment as the primary source of feedback are less likely to be perceived as transformational by team members. In the present study, there was a lack of support for the hypothesis that leaders' state goal orientation significantly influences laissez-faire leadership and active management. Considering the weak relationships between the variables, it may be more salient to team members when leaders have an effective approach to problems or challenges (i.e., learning-approach) rather than less effective approaches.

Results also revealed that transformational leadership positively impacted ratings of leader effectiveness. These findings are consistent with previous research findings (e.g., Bass & Avolio, 1994; Judge & Piccolo, 2004) and provide further support for the notion that leaders who express confidence in team members' abilities to complete the task, encourage members to think differently about problems, and provide individualized attention to team members are more likely to be seen as effective. However, transformational leadership did not

significantly influence team performance. Considering that team members' abilities to construct and sell products played key roles in achieving high team performance, this may represent boundary conditions for both effective (i.e., transformational leadership) and ineffective leadership behaviors (i.e., laissez-faire leadership), such that irrespective of whether leaders are adept or inept at the position, team member's abilities in certain situations may be more instrumental in achieving high team performance than leadership ability. Additionally, the study results showed that active management failed to impact perceptions of leader effectiveness and team performance. Although this finding is inconsistent with the study hypotheses, it is consistent with past research that has found a weak association between active management and team performance (Judge & Piccolo, 2004). The leader's goal orientation also failed to have a direct impact on leadership effectiveness and team performance. Considering the performance-focused nature of this task (i.e., maximize profit), inducing leaders with a state performance-approach goal orientation might have demonstrated stronger effects for study outcomes in this context (Van Yperen, Blagam & Postmes, 2014). Also, given the distal nature of goal orientation, the lack of support for this hypothesis is not surprising. Weak to nonexistent relationships between goal orientation and performance outcomes are heavily documented in the literature (Payne et al., 2007).

Theoretical and Practical Implications

The study findings have several implications for leadership science and practice. First, the results have implications for further understanding how and

why leaders' state goal orientation significantly influences transformational leadership behaviors. This study found that inducing leaders with a specific achievement orientation significantly influenced perceptions of their leadership behaviors. This may indicate that to gain a better understanding of the drivers of transformational leadership, we may need to pay closer attention to how leaders pick up cues and information from their environment and process this information (Salancik & Pfeffer, 1978), as this information influences their approach to tasks and work activities. Leaders who observed another leader momentarily providing constructing feedback to team members and encouraging members to make mistakes were more likely to focus on similar things during the task. This has implications for studying the social context in which leaders inhabit to gain a better of understanding of who and what is influencing their approach to achievement situations.

Further, although this study found a significant effect for transformational leadership on leader effectiveness, the predictor did not have a significant effect on team performance. This echoes Lord and Dinh's (2014) call for a need to differentiate between perceptions of effectiveness and how leaders are actually effective. The following results have implications for the need to gain further insight in how transformational leaders can be perceived as effective but still not impact unit performance.

As for practical implications, the present research may serve as a potential guide for management development professionals looking to develop more change agents within the organization. Organizations spend considerable

resources (time, money, effort) on developing managers to be more effective leaders (Marx, 1982). In this present study, college age students viewed a 5-minute video that induced a learning-approach orientation, which influenced perceptions of transformational leadership behaviors by followers. This suggests that leaders may not necessarily need to spend considerable resources to develop change agents, but by empowering leaders to engage in learning-oriented behaviors such as emphasize learning from mistakes, and showing concern for their followers can increase the likelihood that leaders will perform transformational leadership behaviors.

Limitations and Future Directions for Research

Although there are many strengths of the present investigation, it is not without its limitations. First, this was a laboratory study in which primarily Caucasian, college-age students completed a lab task. The present sample does not necessarily represent today's workforce, which is comprised of older workers. Individuals acquire more work and leadership experience with age. Such individuals may be more effective in leader roles than college students with very limited work and leadership experience. Secondly, leaders occupied the same physical space as followers when leaders were rated on their leadership behaviors and effectiveness. In spite of instructions stating that ratings would not be shared with leaders and the fact that leaders were on average one computer station away from team members, team members may have been concerned that leaders could observe them as they rated leaders on their behaviors and effectiveness and may have inflated leader ratings to avoid being identified as disapproving team

members. Moreover, for this particular task, leaders were selected based upon how they signed up for the experiment. Although this strengthens the internal validity of the study, it does not resemble leadership in the workplace. Leaders in this experiment may not have felt qualified or confident in their abilities to lead their teams effectively, which may have affected their actual abilities to lead. In fact, research suggests that leader pre- and post-training self-efficacy is significantly related to leader learning orientation (McCormick, 1999). Organizational leaders are aware of their leadership responsibilities before stepping into leadership roles and likely have various experiences that qualify them for the position. In fairness, leaders in this experiment were pretrained on the task, which allowed them to become familiar with the task and gain task-relevant knowledge that placed them in a better position to lead others than not being trained on the task. Future research should look to examine state goal orientation as an antecedent of transformational leadership in actual organizational settings. Leaders' achievement orientations in organizational settings might be influenced by more macro-level phenomena (e.g., org culture), which may have a stronger impact on transformational leadership behaviors.

It is also important to point out various factors that influenced the interpretability of study findings. The reliabilities for some of the study scales, namely the laissez-faire and active management, are problematic and make it difficult to draw firm conclusions about their relationships (i.e., correlations) with other study variables. In addition, there were an unequal amount of participants across the study conditions (see Table 1). Violations of the equal covariances

assumption can increase the chances of committing a Type I error (Field, 2005). Upon conducing a linear transformation of the leader effectiveness measure there were not any violations of this assumption, which means I can be confident that the obtained differences in sample variances occurred as a result of random sampling from a population with equal variances. Finally, the small sample size may have influenced the ability to detect an effect in study analyses; however, a one-tailed test was used for all study analyses to increase power. Meta-analytic evidence suggests that state goal orientation has a small effect on distal outcomes such as task performance (Payne et al., 2007); however, in certain cases, individual difference variables can have a considerably larger effect in laboratory settings than field settings (e.g., Devine & Phillips, 2001), especially when they are manipulated. Given the results from the power analysis, there was adequate power at the large effect size level (i.e., power .80), but less than adequate statistical power at the small and moderate effect size level. Thus, it cannot be completely ruled out that leader state goal orientation has a small or medium size effect on study outcomes.

While the present study examined the leader's state learning-approach and performance-avoid goal orientation, future research should seek to also examine leaders' state performance-approach goal orientation as a potential antecedent of transformational leadership behavior. Performance-approach orientation may be more important for leaders in certain industries (e.g., sales) in which significant planning is needed in order to demonstrate high ability and outperform others to earn extrinsic rewards (e.g., bonuses). Performance-oriented leaders may

articulate a compelling vision to achieve extrinsic rewards and use goals (e.g., sales goals) to motivate workers to achieve high standards. Moreover, future research should also examine how the leader's goal orientation influences various leadership processes as well as other leadership behaviors beyond transformational leadership behaviors (e.g., boundary spanning behaviors; Yukl, 2012). Such research could help explain how leaders acquire or fail to acquire necessary resources and assistance for their work units, and how they advance or fail to advance the interests of their units. Moreover, this study used a video to induce a specific achievement within leaders; however, past research has used a variety of methods to induce achievement orientations (e.g., Bell& Kozlowski, 2002; Brett & Vandewalle, 1999) and future research could draw from these previous investigations to use alternative ways to induce achievement orientations in leaders in order to better determine how to facilitate transformational leadership behaviors. Finally, future research should seek to examine the dynamic nature of goal orientation within leaders and examine their achievement orientation as they switch between tasks and activities, and consequently, how their behaviors change across tasks.

In summary, the present study extends transformational leadership theory by demonstrating how leaders' state goal orientation influences perceptions of transformational leadership behaviors. This research provides additional support for the advantageous effects of transformational leadership. The study findings add to the sparse literature on the antecedents of transformational leadership and have several implications for leadership research and practice.

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Appendix A

State Goal Orientation Measure

Please indicate on the scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Learning-Approach Items					
1) I was concerned with improving my ability during the task.	1	2	3	4	5
2) I l did look for opportunities to develop new skills and knowledge during the task.	1	2	3	4	5
3) I was willing to work on challenging aspects of the task where I can learn a lot from.	1	2	3	4	5
4) For me, development of skills was an important reason for me to take risks.	1	2	3	4	5
5) I enjoyed challenging and difficult aspects of the task where I could learn new skills.	1	2	3	4	5
6) I preferred to work on aspects of the task that required a high level of ability and talent.	1	2	3	4	5
Performance-Approach Items					
7) I was concerned with showing that I can outperform others.	1	2	3	4	5
8) I would rather prove my ability on a task that I can do well at than to complete this task.	1	2	3	4	5
9) I tried to figure out what it takes to prove my ability to others during the task.	1	2	3	4	5
10) I enjoyed it when others were aware of how well I was doing.	1	2	3	4	5
11) I preferred to work on aspects of the task where I can prove my ability to others.	1	2	3	4	5
Performance-Avoid Items					
12) I avoided aspects of the task if there was a chance that I would appear rather incompetent to others.	1	2	3	4	5
13) Avoiding a show of low ability on the task was more important to me than learning a new skill.	1	2	3	4	5
14) I was concerned whether my performance would reveal that I had low ability.	1	2	3	4	5
15) I avoided aspects of the task where I might perform poorly.	1	2	3	4	5
16) When I didn't understand something, I avoided asking what might have appeared to others to be "dumb questions" that I should have already known the answer to already.	1	2	3	4	5

Appendix B

Multifactor Leadership Questionnaire

This questionnaire is used to describe the leadership style of the team leader as you perceive it. Answer all items on this answer sheet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Thirty-two descriptive statements are listed on the following pages. Judge how frequently each statement fits the leader you are describing. Use the following rating scale:

0	1	2	3	4
Not at all	Once in a While	Sometimes	Fairly Often	Frequently, if not always

The Team Leader…					
1. Provides me with assistance in exchange for my efforts.	0	1	2	3	4
2. Re-examines critical assumptions to question whether they are appropriate	0	1	2	3	4
3. Fails to interfere until problems become serious	0	1	2	3	4
4. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards	0	1	2	3	4
5. Avoids getting involved when important issues arise	0	1	2	3	4
6. Talks about his/her most important values and beliefs	0	1	2	3	4
7. Is absent when needed	0	1	2	3	4
8. Seeks differing perspectives when solving problems	0	1	2	3	4
9. Talks optimistically about the future	0	1	2	3	4
10. Instills pride in me for being associated with him/her	0	1	2	3	4
11. Discusses in specific terms who is responsible for achieving performance targets	0	1	2	3	4
12. Waits for things to go wrong before taking action	0	1	2	3	4
13. Talks enthusiastically about what needs to be accomplished	0	1	2	3	4
14. Specifies the importance of having a strong sense of purpose	0	1	2	3	4
15. Spends time teaching and coaching	0	1	2	3	4
16. Makes clear what one can expect to receive when performance goals are achieved	0	1	2	3	4
17. Shows that he/she is a firm believer in " If it ain't broke, don't fix it."	0	1	2	3	4
18. Goes beyond self-interest for the good of the group.	0	1	2	3	4
19. Treats me as an individual rather than just as a member of a group	0	1	2	3	4
20. Demonstrates that problems must become chronic before taking action	0	1	2	3	4
21. Acts in a way that builds my self-respect	0	1	2	3	4
22. Concentrates his/her full attention on dealing with mistakes, complaints, and failures	0	1	2	3	4

23. Considers the moral and ethical consequences of decisions	0	1	2	3	4
24. Keeps track of all mistakes	0	1	2	3	4
25. Displays a sense of power and confidence	0	1	2	3	4
26. Articulates a compelling vision of the future	0	1	2	3	4
27. Directs my attention toward failures to meet standards	0	1	2	3	4
28. Avoids making decisions	0	1	2	3	4
29. Considers me as having different needs, abilities, and aspirations from others	0	1	2	3	4
30. Gets me to look at problems from many different angles	0	1	2	3	4
31. Helps me to develop my strengths	0	1	2	3	4
32. Suggests new ways of looking at how to complete assignments	0	1	2	3	4
33. Delays responding to urgent questions	0	1	2	3	4
34. Emphasizes the importance of having a collective sense of mission	0	1	2	3	4
35. Expresses satisfaction when I meet expectations	0	1	2	3	4
36. Expresses confidence that goals will be achieved	0	1	2	3	4

Appendix C

Trait Goal Orientation Measure

Please indicate on the scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Learning-Approach Items					
1. I often read materials related to my coursework to improve my ability.	1	2	3	4	5
2. I am willing to select a challenging class assignment that I can learn a lot from.	1	2	3	4	5
3. I often look for opportunities to develop new skills and knowledge.	1	2	3	4	5
4. I enjoy challenging and difficult tasks in class where I'll learn new skills.	1	2	3	4	5
5. For me, development of my education ability is important enough to take risks.	1	2	3	4	5
6. I prefer to work in situations that require a high level of ability and talent.	1	2	3	4	5
Performance-Approach Items					
7. I would rather prove my ability on a task that I can do well at than to try a new task.	1	2	3	4	5
8. I'm concerned with showing that I can perform better than my classmates.	1	2	3	4	5
9. I try to figure out what it takes to prove my ability to other classmates.	1	2	3	4	5
10. I enjoy it when others at work are aware of how well I am doing.	1	2	3	4	5
11. I prefer to work on projects where I can prove my ability to others.	1	2	3	4	5
Performance-Avoid Items					
12. I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others.	1	2	3	4	5
13. Avoiding a show of low ability is more important to me than learning a new skill.	1	2	3	4	5
14. I'm concerned about taking on a task at school if my performance would reveal that I had low ability.	1	2	3	4	5
15. I prefer to avoid situations at school where I might perform poorly.	1	2	3	4	5
16. When I don't understand something at school, I prefer to avoid asking what might appear to others to be "dumb questions" that I should already know the answer to already.	1	2	3	4	5

Appendix D

Personality Measure

Please use the following list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly the same age.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	**2**	**3**	**4**	**5**

<------|----------|----------|----------|----------|--------->

1. Jealous _____
2. Extraverted _____
3. Energetic _____
4. Bold _____
5. Temperamental _____
6. Unenvious _____
7. Unintellectual _____
8. Practical _____
9. Complex _____
10. Organized _____
11. Unsympathetic _____
12. Cold _____
13. Disorganized _____
14. Envious _____
15. Imaginative _____
16. Kind _____
17. Warm _____
18. Cooperative _____
19. Talkative _____
20. Intellectual _____

21. Systematic _____
22. Relaxed _____
23. Efficient _____
24. Rude _____
25. Creative _____
26. Deep _____
27. Sympathetic _____
28. Withdrawn _____
29. Bashful _____
30. Harsh _____
31. Shy _____
32. Moody _____
33. Fretful _____
34. Sloppy _____
35. Uncreative _____
36. Inefficient _____
37. Touchy _____
38. Careless _____
39. Quiet _____
40. Philosophical _____

Appendix E

Team Ratings of Leader Effectiveness

Please indicate on the scale from 1-7 your level of agreement or disagreement with the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. Overall, I thought the leader did a good job.	1	2	3	4	5	6	7
2. Overall, this team leader was very effective.	1	2	3	4	5	6	7
3. Overall, I liked working together with this leader.	1	2	3	4	5	6	7
4. The team leader led the team in a way that motivated the team members.	1	2	3	4	5	6	7
5. The leader was effective at managing the team's performance time.	1	2	3	4	5	6	7
6. The leader was effective at meeting the needs of team members.	1	2	3	4	5	6	7
7. The leader was *ineffective* at fulfilling his/her leadership tasks.	1	2	3	4	5	6	7
8. The leader was *ineffective* at solving team issues.	1	2	3	4	5	6	7

1	2	3	4	5	6	7
Very Unsuccessful	Unsuccessful	Somewhat Unsuccessful	Neutral	Somewhat Successful	Successful	Very Successful

9. How successful was your team leader?	1	2	3	4	5	6	7
10. How successful will your leader be in future tasks?	1	2	3	4	5	6	7

Appendix F

Demographic Questionnaire

Please indicate your year in school:

1st year 2nd year 3rd year 4th year Other

What is your age? _____

Please circle your gender:

a. Female b. Male

Please indicate the race/ethnicity with which you most identify:

a. White
b. Black/African American
c. Hispanic/Latino
d. Asian/Pacific Islander
e. Native American/Alaska Native
f. Other:_____

What was your score on the: ACT_____ and/or SAT_____

Have you had opportunities to lead groups in the past?

1	2	3	4	5
Never	Rarely	Sometimes	Very Often	Always

Have you had experience using Lego blocks in the past?

1	2	3	4	5
Never	Rarely	Sometimes	Very Often	Always

How familiar are you with the task you completed (The Manufacturing Game)?

1	2	3	4	5
Not familiar at all	Unfamiliar	Somewhat Familiar	Familiar	Very Familiar

I enjoyed playing "The Manufacturing Game?"

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

Appendix G

Preliminary Task Instructions

Preliminary Task Instructions

Materials:

- LEGO® blocks
- Form containing the materials necessary to build each product
- Market prices that lists supply costs and selling prices
- Order request form to submit to supplier when ordering materials and two- and three-dimensional product images

Game Instructions:

You work for a for-profit organization that manufactures an array of products (i.e., Jeeps, robots, boats). In this task, you will purchase Lego parts from the supplier (experimenter), assemble the products, and sell the completed products back to the supplier for a profit. In this game, you are to build three products and sell them for profit. You will begin the game with $10,000 to purchase materials. You cannot borrow more money. For instance, your first order cannot exceed the amount of $10,000. You can use additional revenue gained to purchase more raw materials. Therefore, you are not limited to only spending $10,000. If you happen to over-spend at any point, you will be penalized 15% of your profits at the end of the game. It is your responsibility to keep track of the money you spend and the money you receive from selling the products. Keep in mind that the goal is to maximize your profits.

Use the ordering form to purchase raw materials (LEGO® blocks), and then use these raw materials to build the three products. The supplier will only accept orders that are submitted using the ordering form. Keep in mind that the products you build should resemble precisely the two- and three-dimensional product images. If the products are not built precisely as displayed in the model, they will be rejected and returned for repairs by the supplier (experimenter). The colors of the component parts do not have to match but the dimensions must match. Once products are completed and proposed to the supplier (experimenter), he/she will purchase the completed products at the specified market price. To sell your products you must indicate you are selling to the supplier. The supplier will not assume that you want to sell a particular product.

You will be given 5 minutes to prepare for the task. The supplier will inform you at the end of your 5-minute preparation time. You will then be instructed that your performance session has begun. At that time you can take your first order to the supplier. You are allowed only one order at a time, however you may make as many orders as you want. Write all of your orders on your Order Request Form.

You will be given 15 minutes of actual production time. You are not allowed to wear a watch or use any device that gives the time in order to ensure standardization of resources across all participants; however, you can ask the experimenter for time checks throughout the 15-minute period. It is your responsibility to keep track of time. All transactions must be completed during the

allotted 15 minutes. Once the 15-minute period has expired, you will be instructed to stop all activities. You may not sell products after performance time expires, and the supplier will not purchase unfinished products or excess materials. At the conclusion of the game, profit will be calculated by subtracting the money spent on raw materials from total revenue.

Appendix H

Leader Instructions / Learning-Approach Condition

Leader Learning-Approach Instructions

Now that you have completed the task independently, you will lead your team on the task. You are responsible for communicating the instructions for "The Manufacturing Game" to team members. The information provided below describes the game materials and game instructions. The instructions for this task are different from the previous instructions, thus, please read them carefully.

Materials:

- LEGO® blocks
- Form containing the materials necessary to build each product
- Market prices that lists supply costs and selling prices at four different times
- Order request form to submit to supplier when ordering materials and two- and three-dimensional product images
- Calculator and paper

Game Instructions:

You are the leader of a small business organization that manufactures jeeps, robots, and boats. You will lead a team of employees who have no experience on the manufacturing task.

This task differs from the task that you have practiced. First, you have 10 minutes to prepare your group for production, and second, you and your group have 20 minutes to produce products. Third, the market information changes after each five minutes of the production session. Time will run continuously during the experiment and the supplier will not inform you when market prices change. You can, however, request the time from the suppliers as often as you wish. Remember, you are responsible for keeping the team on track. Finally, you are not allowed to help make the products your team produces. You can, however, place orders and sell products. Remember you are the team leader, not a producer. All other task instructions are the same as the previous instructions.

Remember, if the products are not built precisely as displayed in the model, they will be rejected and returned for repairs by the supplier. Again, you will be penalized if you exceed the $10,000 "debt" and you can use revenue gained to buy additional raw materials.

You will be given 10 minutes to explain the instructions and prepare for the task. At the end of that time the team can take the first order to the supplier. The team is allowed only one order at a time, however the team may make as many orders as desired.

The team will be given 20 minutes of actual production time. It is important to regularly refer to the document of market prices throughout this time period because the specified market price will change every 5 minutes. At the conclusion

of the game, team profit will be calculated by subtracting the money spent on raw materials from total revenue.

Finally, you should approach the task as the team leader based on the instructions given to you in the video— emphasize the importance of continual learning and development (i.e., stress the importance of learning from mistakes, encourage experimentation with different approaches, assign challenging tasks to stretch and develop members' skills).

Appendix I

Team Task Instructions / Performance-Avoid Condition

Leader Performance-Avoid Instructions

Now that you have completed the task independently, you will lead your team on the task. You are responsible for communicating the instructions for "The Manufacturing Game" to team members. The information provided below describes the game materials and game instructions. The instructions for this task are different from the previous instructions, thus, please read them carefully.

Materials:

- LEGO® blocks
- Form containing the materials necessary to build each product
- Market prices that lists supply costs and selling prices at four different times
- Order request form to submit to supplier when ordering materials and two- and three-dimensional product images
- Calculator and paper

Game Instructions:

You are the leader of a small business organization that manufactures jeeps, robots, and boats. You will lead a team of employees who have no experience on the manufacturing task.

This task differs from the task that you have practiced. First, you have 10 minutes to prepare your group for production, and second, you and your group have 20 minutes to produce products. Third, the market information changes after each five minutes of the production session. Time will run continuously during the experiment and the supplier will not inform you when market prices change. You can, however, request the time from the suppliers as often as you wish. Remember, you are responsible for keeping the team on track. Finally, you are not allowed to help make the products your team produces. You can, however, place orders and sell products. Remember you are the team leader, not a producer. All other task instructions are the same as the previous instructions.

Remember, if the products are not built precisely as displayed in the model, they will be rejected and returned for repairs by the supplier. Again, you will be penalized if you exceed the $10,000 "debt" and you can use revenue gained to buy additional raw materials.

You will be given 10 minutes to explain the instructions and prepare for the task. At the end of that time the team can take the first order to the supplier. The team is allowed only one order at a time, however the team may make as many orders as desired.

The team will be given 20 minutes of actual production time. It is important to regularly refer to the document of market prices throughout this time period because the specified market price will change every 5 minutes. At the conclusion

of the game, team profit will be calculated by subtracting the money spent on raw materials from total revenue.

Finally, you should approach the task as the team leader based on the instructions given to you in the video—emphasize the importance of avoiding errors (i.e., stress that mistakes are not allowed, assign individual tasks to members who don't make mistakes).

Appendix J

Transaction Log Sheet

Team ID: _____

Leader Orders

Time	Item Description: (e.g., 1x1)	Amount
	Amount Total	**$**

Leader Sales

Time	Item Description: (e.g., Jeep)	Amount
	Amount Total	**$**

Total Profit (Total Sales – Total of Orders) = _$_____

Appendix K

Market Prices

First 5 minutes (0:00 – 5:00)

Component Costs		Selling Prices	
Component	Cost	Product	Market Price
2 x 4	$80	Jeep	$3000
2 x 2	$60	Boat	$2300
1 x 2	$40	Robot	$2000
1 x 1	$20		
Wheels	$200		

Second 5 minutes (5:00 – 10:00)

Component Costs		Selling Prices	
Component	Cost	Product	Market Price
2 x 4	$100	Jeep	$2000
2 x 2	$75	Boat	$4000
1 x 2	$10	Robot	$2500
1 x 1	$20		
Wheels	$200		

Third 5 minutes (10:00 – 15:00)

Component Costs		Selling Prices	
Component	Cost	Product	Market Price
2 x 4	$100	Jeep	$5000
2 x 2	$50	Boat	$2000

1 x 2	$100	Robot	$1000
1 x 1	$50		
Wheels	$500		

Fourth 5 minutes (15:00 – 20:00)

Component Costs		Selling Prices	
Component	Cost	Product	Market Price
2 x 4	$50	Jeep	$3000
2 x 2	$50	Boat	$1000
1 x 2	$100	Robot	$3500
1 x 1	$200		
Wheels	$400		

Appendix L

Debriefing Statement

DEBRIEFING STATEMENT

The information listed below must remain confidential and should not be shared with anyone outside of this experiment.

The term "goal orientation" is often used by researchers to describe how an individual interprets and approaches situations in which individual ability can be demonstrated (e.g., performing a job task). How leaders interpret, approach, and respond in achievement settings may influence how their leadership behaviors are perceived by followers. The current study seeks to investigate how the team leader's goal orientation influences perceptions of leadership behaviors and team outcomes.

During this experiment, deception was used. Leaders were randomly assigned to 1 of 2 conditions in which they were induced with a learning-approach or performance-avoid goal orientation. Leaders induced with a learning-approach goal orientation were encouraged to focus on developing team members' skills during the task, while leaders induced with a performance-avoid goal orientation were encouraged to emphasize the avoidance of errors and mistakes. Participants were not given information about this manipulation during the consent process because leaders would have likely approached the task differently if they had prior knowledge of the manipulation. Existent research has not answered the question of whether learning-approach or performance-avoid leads to better outcomes, thus, the purpose of this research is to determine which orientation leads to better team outcomes.

If you would like to learn more about the experiment in question, you can contact Tyree Mitchell at tmitch21@depaul.edu or consult these references:

Dragoni, L. (2005). Understanding the emergence of state goal orientation in organizational
units: The role of leadership and multilevel climate perceptions. *Journal of Applied Psychology, 90*, 1084-1095.

Dragoni, L., & Kuenzi, M. (2012). Better understanding work unit goal orientation: Its
emergence and impact under different types of work unit structure. *Journal of Applied Psychology, 97*, 1032-1048.

Hendrick, J. W., & Payne, S. C. (2007). Beyond the big five: leader goal orientation as a
predictor of leadership effectiveness. *Human Performance, 20*, 37-343.

Thank you for participating in this study!

Appendix M

Leader Learning-Approach Video Script

The Manufacturing Game influences positive organizational outcomes including team learning, communication, and decision-making. The skills that team members develop during this game will be useful in the near future. You can expect some mistakes, but overall, you should see improvement within the team. You can stress to the team the importance of taking this opportunity as a chance to gain skills that will be useful to them in the workplace.

Beginning with employee development, you should make sure that team members try to learn as much about the task as possible to gain the skills needed to be successful. This means that you should offer advice to team members on how to effectively build products and maximize team profit now that you have been through the task. For example, if you see one or more team members having difficulty building a product, explain to them what they need to do differently in order to get better at building the products. This will convey that you are supportive and invested in team members' development.

Secondly, as the team leader, you want to encourage the team to take different approaches to the task in order to develop strategies. You want to use mistakes as an opportunity to learn. For example, if team members incorrectly construct a product, use this as an opportunity to teach them how to correctly construct the product and offer strategies that can assist them in doing so. If the team doesn't achieve great success approaching the task in one particular way, encourage members to experiment with different approaches – because the more strategies team members know, the better the team will be on the task.

Additionally, when team members make mistakes, it is important that you offer constructive feedback so that members know how to improve and are motivated to improve. For example, if members incorrectly construct a product, explain what they did correctly first, and then state how they can correct the error. If team members receive helpful and relevant feedback, they are less likely to make the same mistake again. Moreover, when you direct the feedback at their performance and not at them directly, team members are less likely to view the feedback as threatening.

Further, it is important that you give praise to the team for exerting high levels of effort and improvement. For example, if the team is working hard while trying to construct a product, let them know how much you appreciate their efforts and how well they're doing. Be sure to let them know that their hard work doesn't go unnoticed and will pay off for the team in the end. Make sure you do this throughout the entire task. This will serve as a source of feedback and boost team members' confidence levels, which, in turn, should lead to increased motivation and ultimately higher team performance.

Moreover, you want to set learning goals for the team to motivate them and monitor the team's progress on the task. Setting a learning goal simply means developing a standard for the team to work towards. For example, you can create a goal that within the first 10 minutes of the task each team member must develop

at least two different strategies on how to correctly build products. In other words, the more strategies the team knows, the greater likelihood the team will improve on the task. The goals you set should motivate team members and allow you to track individual progress.

Finally, you want to assign tasks that will challenge team members. Assigning individual tasks that are challenging will provide team members with opportunities to enhance skills and get better at different parts of the task. For example, if one team member is assigned to build a small part of the boat for the first product, assign this individual the task of building the entire jeep for the second product. If team members are assigned challenging tasks, they are more likely to fully exert themselves on the task and sustain high levels of motivation.

In sum, you should develop team members' skills during the task, encourage the team to experiment with different strategies, use mistakes as opportunities to learn, offer constructive feedback on how to improve upon mistakes, commend the team for its improvement and for giving high levels of effort, develop learning goals to motivate and measure team progress, and assign individual tasks to stretch and develop team members.

Good luck on leading your team through the task!

Appendix N

Leader Performance-Avoid Video Script

As the team leader you are responsible for guiding the team through the activity. How the team performs will be a reflection of the team's capabilities and your leadership capabilities. The cognitive ability of team members will be difficult to improve through effort, thus you should focus on protecting your reputation and make sure the team does not look bad while performing the task.

First, you want to place great emphasis on avoiding mistakes and not committing errors on the task. For example, when you first meet with the team, simply tell them that mistakes should be avoided at all costs, and let them know that there is no room for error considering the short nature of this task. Throughout the task, remind team members the importance of avoiding mistakes. Allowing team members to feel comfortable with errors will not help the team perform well nor does it help the team's image. Remember, if the team performs poorly because of frequent errors, this will ultimately reflect on you.

Additionally, you want to pay close attention to poor performing team members and those who make errors frequently. If you spend your time correcting the mistakes of the poor performers, then the team as a whole will be less likely to commit errors and perform poorly. For example, if a team member is consistently constructing products incorrectly, tell them explicitly that they constructed the product incorrectly and state that it is important they don't make the same error again. Remember, when individual members perform poorly, it reflects both the team members and the leader. Neither you nor the team can afford to look bad while performing this task.

Further, when team members make a mistake it is imperative that you inform them about the error immediately. For example, if a team member incorrectly constructs a product, simply tell them immediately that it is incorrect and needs to be corrected. The longer you wait to tell team members about their mistake, the more likely they will commit the mistake a second time, and the more it will hurt the team's performance. Informing the team about their mistakes will serve as a source of feedback and convey the message that mistakes are not allowed.

Moreover, you want to use and encourage behaviors that help present a positive image of the team. For example, if the team makes a large number of errors when constructing products, inform the team that the errors could be a result of unclear task instructions rather than poor team performance. Regardless of what happens during the task, protect the team's image and do whatever it takes so that the team doesn't appear to be a group of poor performers.

Assign individual tasks to those who you believe will not make mistakes. As a leader, you want to assign tasks to team members who you know won't make the team look bad. For example, you should assign a team member that avoids making errors the task of building the entire boat by his/herself, whereas a team member that makes errors frequently should always be partnered up with another team member during the task. Allowing team members that make errors

frequently to work on tasks individually will not help the team achieve high performance. Also, assigning individual tasks to error-prone team members will reflect on your leadership skills.

Finally, you want to only commend those who do not make errors. For example, if you observe a team member who is relatively free from error when constructing products, inform him or her that they are doing well and make sure that they continue to avoid making errors. Giving praise to team members that make errors frequently conveys the message that mistakes are permissible, which they shouldn't be. Further, those who avoid mistakes may not work as hard to avoid errors if they observe that members who do make mistakes get rewarded.

In sum, emphasize the avoidance of errors and mistakes, pay close attention to poor performing team members and team members who make mistakes, inform team members about their mistakes, encourage behaviors that help present a positive image of the team, assign individual tasks to those who you believe will not make mistakes, and only commend those who do not make errors.

Good luck on leading your team through the task!