

ANTECEDANT CONDITIONS OF SHARED LEADERSHIP: AN EXAMINATION OF  
TEAM PERSONALITY COMPISITION, SHARED LEADERSHIP, AND TEAM  
EFFECTIVENESS.

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## ABSTRACT

The present study examined the antecedent conditions necessary for shared leadership to develop in teams and enhance team effectiveness. An overview of the research on traditional leadership, shared leadership, and team personality composition examined the evidence in support of using team agreeableness, conscientiousness, and openness to experience to predict shared leadership in teams. The study sample consisted of manufacturing employees at an appliance manufacturing plant. It was proposed that team agreeableness, conscientiousness, and openness to experience would significantly predict shared empowering leadership in teams, which subsequently would predict team effectiveness. Results of multiple regression revealed no significant relationships between team agreeableness and openness to experience with shared empowering leadership or team effectiveness. Team conscientiousness was significantly negatively related to team effectiveness, which was in the opposite direction from that hypothesized. Team conscientiousness was not significantly related with shared empowering leadership. Implications, major limitations, and suggestions for future research are discussed.

Keywords: shared leadership, empowering leadership, personality, team composition, team effectiveness, agreeableness, conscientiousness, openness to experience, antecedent

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## LIST OF SYMBOLS

$\alpha$ , Chronbach's alpha

$\beta$ , Beat weight, multiple regression procedure

$F$ ,  $F$  distribution, Fisher's  $F$  ratio

H1, First hypothesis

H2, Second hypothesis

H3, Third hypothesis

H4, Fourth hypothesis

$M$ , Mean (average)

$N$ , Total number of cases

$p$ , Probability

$r$ , Estimate of Pearson product-moment correlation coefficient

## CHAPTER 1

### INTRODUCTION

Over the last two decades, there has been a notable change in the way organizational leadership has been conceptualized in the empirical literature (Fletcher & Käufer, 2003; Wang, Waldman, & Zhang, 2014). The focus is no longer solely on examining a single individual's influence over a group of followers; rather, the followers' leadership capabilities are also receiving considerable attention (Pearce & Conger, 2003). This shift in focus has occurred primarily in response to the changing nature of the workplace (Avolio, Sivasubramaniam, Murry, Jung, & Garger, 2003; Burke, Fiore, & Salas, 2003; Hooker & Csikszentmihalyi, 2003). Due to rapid development of technology and increase in global competition, many companies have begun adopting flatter, more decentralized organizational structures in an attempt to respond quickly and effectively to business demands (Houghton, Neck, & Manz, 2003; Jex & Britt, 2008c). As a result, work teams have been used increasingly to help facilitate these responses (Jex & Britt, 2008c). Theories of leadership have started to reflect this change, and research on shared leadership in teams has expanded our understanding of the nature of leadership.

Shared leadership is an emergent process in teams whereby members influence each other, above and beyond that of an appointed leader, in a dynamic and interactive way to achieve group and organizational goals (Gockel & Werth, 2010; Pearce & Sims, 2002; Small & Rentsch, 2010). Previous research has linked shared leadership to various indicators of team effectiveness, including performance (Boies, Lvina, & Martens, 2010; Carson, Tesluk, & Marrone, 2007;

Ensley, Hmieleski, & Pearce, 2006; Hoch, Pearce, & Welzel, 2010; Small & Rentsch, 2010), member cohesion (Bergman, Rentsch, Small, Davenport, & Bergman, 2012), and member satisfaction (Avolio, Jung, Murry, & Sivasbramianiam, 1996). Although the evidence supporting shared leadership's influence on team effectiveness has provided organizations with a valuable tool to enhance organizational performance, much is still not known about the conditions that promote the emergence of shared leadership in teams.

Relatively few studies have examined the variables that influence shared leadership development (Carson et al., 2007). Some researchers have hypothesized the individual, team, and environmental characteristics that theoretically should lead to shared leadership developing in teams (Burke et al., 2003; Conger & Pearce, 2003; Cox, Pearce, & Perry, 2003; Seers, Keller, & Wilkerson, 2003), yet the influence of these characteristics has very seldom been tested. This lack of empirical investigation is surprising given that several researchers have called for investigations into the potential antecedent variables/conditions (e.g., Pearce & Conger, 2003).

Much of the research on shared leadership has utilized McGrath's (1964) input-process-output model of group effectiveness, which proposes a number of antecedent variables that influence group processes and outcomes, to understand shared leadership's association with team effectiveness. Because shared leadership is conceptualized as a team process, it follows that an empirical examination of the necessary antecedent conditions would provide a richer understanding of the nature of shared leadership and its impact on team effectiveness.

Personality is a notable antecedent condition for this analysis. According to Judge, Bono, Ilies, and Gerhardt (2002), a number of studies have provided evidence in support of the association between personality and leadership. Additionally, empirical evidence has provided support of the relationship between team personality composition and team effectiveness (see the literature

review by Halfhill, Sundstrom, Lahner, Calderone, & Nielsen, 2005). However, none have tested the impact of personality on shared leadership and team performance. The purpose of the present study is to provide a cursory examination of personality as an antecedent condition for shared leadership and team effectiveness. The goal is to enhance our understanding of the necessary conditions for shared leadership and to provide organizations with a means by which to enhance team effectiveness through further explication of the shared leadership processes.

## CHAPTER 2

### LITERATURE REVIEW

#### **Leadership**

According to Yukl and Van Fleet (1992), leadership is a difficult construct to define due to the complexity of the leadership process, which is influenced by the dynamic nature of the interactions between leaders and followers (Jex & Britt, 2008b). In its simplest form, leadership is the process of inducing others to take action toward a common goal (Locke, 1999). Leaders are those individuals who influence and implement task objectives and strategies, influence group maintenance and identification, and influence organizational culture (Yukl & Van Fleet, 1992).

Approaches to leadership research in the past half century have commonly focused on examining the interaction between situational factors and either (1) the traits of effective leaders, or (2) distinguishable leadership behaviors (Jex & Britt, 2008b). According to Bass and Bass (2008) traits of leadership refer to leader competencies that are necessary for an individual to emerge and function as a successful leader. These competencies include cognitive, social, emotional, biophysical, and character traits. Much of the existing research has focused on these competencies. For example, Zaccaro (2007) developed a model of leader traits and performance based on previous models of individual differences and leadership performance. He theorized that distal individual attributes (cognitive ability, personality, motives, and values), proximal

individual attributes (social appraisal skills, problem-solving skills, and expertise), and situational factors influence the leadership process and corresponding outcomes.

Much of the research on leadership traits has examined the Big Five and similarly related Five Factor Model (FFM) personality traits and how aspects of personality are related to the emergence and performance of leaders (Bass & Bass, 2008; Judge et al., 2002). Though they differ slightly in terms of factor operationalization, both models of personality include five relatively orthogonal personality factors: extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Ashton & Lee, 2005). Each personality trait and their definition are outlined in Tables 1 and 2 using the markers identified in Goldberg's (1992) study of the Big Five factor structure and the variables used in McCrae and Costa's (1987) validation of the FFM.

A meta-analysis by Judge et al. (2002) examined these personality traits in relation to leadership emergence (whether followers view an individual as a leader) and leader effectiveness (follower perceptions of leader performance in terms of influence and guidance toward goal achievement). They found positive relationships between leadership and extraversion, conscientiousness, agreeableness, and openness to experience and a negative relationship between leadership and neuroticism (an inverse measure of emotional stability). The highest correlations were found between leadership and extraversion and leadership and conscientiousness. Extraversion was also found to be the most consistent correlate of leadership across study setting and the leadership criteria used.

In addition to research on leadership traits, studies have examined the leadership behaviors that predict either effective or ineffective leaders. The prominent models and theories of leadership behavior have identified a number of distinct leadership styles (Cox et al., 2003),

Table 1 Description of the Big Five Personality Traits by Goldberg (1992)

BF Personality Dimension	Description
Extraversion	The level of talkativeness and energy an individual displays. Includes: being talkative, verbal, assertive, energetic, bold, daring, vigorous, unrestrained, and active.
Agreeableness	The level at which an individual remains friendly and cooperative with others. Includes: being kind, cooperative, sympathetic, warm, trustful, considerate, pleasant, helpful, and generous
Conscientiousness	The level at which the individual is organized and detail-oriented. Includes: being organized, systematic, thorough, practical, neat, efficient, careful, steady, and prompt.
Emotional Stability	The level of emotional control an individual displays. Includes: being unenvious, unemotional, relaxed, imperturbable, unexcitable, and undemanding.
Openness to Experience	The level of intellect an individual displays. Includes: being creative, complex, imaginative, bright, philosophical, artistic, deep, innovative, and introspective

including aversive, directive, transformational, transactional, and empowering leadership (Pearce & Sims, 2002).

*Aversive leadership* refers to leadership that is obtained primarily through the intimidation and punishment of followers (Pearce & Sims, 2002). It reflects the least amount of follower autonomy and participation in goal setting activities. Although it is not a popularly

Table 2 Description of the Five Factor Model (FFM) Traits by McCrae and Costa (1987)

FFM Personality Dimension	Description
Extraversion	The level of social ambition an individual displays. Includes: being sociable, affectionate, friendly, spontaneous, talkative, active, passionate, and warm
Agreeableness	The level at which the individual strives to remain friendly and likable to others. Includes: being good natured, courteous, sympathetic, trusting, generous, lenient, flexible, and humble
Conscientiousness	The level at which the individual has a prevailing will to achieve. Includes: being ambitious, hardworking, reliable, well organized, self-disciplined, punctual, and persevering.
Emotional Stability	The level of emotional control an individual displays. Includes: being calm, relaxed, even-tempered, secure, and unemotional.
Openness to Experience	The level of intellect an individual displays. Includes: being original, imaginative, creative, complex, curious, analytical, liberal, and untraditional.

accepted style of leadership, research on punishment suggests that aversive leadership can be effective in influencing followers if punishment is administered correctly (e.g., following immediately after an unfavorable work behavior; Arvey & Ivancevich, 1980).

*Directive leadership* is characterized by power and influence that is derived from an individual's formal authoritative position. It is based on McGregor's (1960) Theory X, which

stipulates that employees must be carefully supervised and coerced to accomplish organizational goals because of their inherent laziness. Additionally, this style reflects initiating structure behaviors (the extent to which a leader defines roles in a group) and task-oriented behaviors (Pearce & Sims, 2002). According to Bass and Bass (2008), this style of leadership is most effective if leaders have more relevant knowledge of the goals and associated tasks than their followers, although they note that this is unlikely to occur.

*Transactional leadership* represents leader influence that is contingent upon exchange relationships between leaders and followers (Burns, 1978). It is based on reinforcement theory and includes contingent reward (rewards based on desired behaviors), management by exception–passive (managers taking corrective action after unwanted behavior), and management by exception–active (managers taking corrective action prior to unwanted behavior). Transactional leaders motivate followers to engage in desired behaviors by satisfying follower self-interests. Burns (1978) contrasted transactional leadership with *transformational leadership*, which is based on inspiring followers to go beyond their self-interests to achieve organizational goals. Four dimensions characterize transformational leaders: idealized influence (demonstrating admirable leader behaviors such as morality and ethics), inspirational motivation (articulating appealing and inspirational visions), intellectual stimulation (challenging assumptions, taking risk, and soliciting followers ideas), and individualized consideration (attending to followers needs) (Judge & Piccolo, 2004).

*Empowering leadership* emphasizes leading others to develop self-management or self-leadership skills (Pearce & Sims, 2002). Popularly referred to as SuperLeadership, it describes the process of leading followers to effectively lead themselves (Manz & Sims, 2001). Empowering leadership builds on the substitutes for leadership framework, which states that

certain conditions (e.g., highly routinized work) substitute the need for a formal leader to guide and influence their followers (Pearce & Conger, 2003). According to Manz and Sims (2001), self-leadership and self-management can be conceptualized as potential substitutes for formal leadership under certain conditions. These conditions include the followers: 1) being knowledgeable about organizational needs, 2) having necessary task-related skills and abilities, and 3) being motivated to engage in productive behaviors. Empowering leadership is most effective when followers display the appropriate self-control behavior when faced with a decision making task. It also provides the most employee autonomy and participation in goal setting activities.

### **Shared Leadership**

A new trend in leadership research involves examining the leadership ability of the team as a whole (Pearce & Conger, 2003). This form of leadership is referred to as shared leadership. Shared leadership represents a different lens through which to examine the leadership process. For example, Yukl (1998) viewed leadership as a group process rather than concentrated in a single individual. He referred to the group distributed leadership process as shared leadership (as cited in Pearce & Sims, 2002). Research over the past two decades has explored this process, and a number of empirical studies have incorporated it into the leadership and team literature.

According to Pearce and Conger (2003), the shared leadership influence process includes both lateral and horizontal influence. Lateral, or peer, influence refers to the influence team members have on each other. Horizontal influence includes both upward and downward influence between team members and the appointed leader. Shared leadership is commonly viewed as a supplement to traditional (vertical) leadership in teams (Ensley et al., 2006; Pearce

& Sims, 2002; Seibert, Sparrowe, & Liden, 2003). However, shared leadership remains distinct from traditional leadership in that it does not focus primarily on the downward influence of a single individual (Pearce & Sims, 2001, 2002).

Like traditional leadership, shared leadership has been categorized according to the leadership styles mentioned above (Wang et al., 2014). Shared aversive leadership refers to the level at which the team *as a whole* engages in intimidation and reprimand to influence team members. Shared directive leadership occurs whenever the team sets goals and instructs or demands team members to carry out work. Shared transactional and transformational leadership refer to whether the team as a whole influences team members through exchange relationships or inspiration, respectively. Shared empowering leadership occurs whenever the team influences team members to develop and utilize self-management skills (Pearce & Sims, 2002).

Shared leadership is grounded in organizational theory and has been shaped by research on emergent leadership, team member exchange, leader-member exchange, participative decision-making, and self-leadership (Pearce & Conger, 2003). An adapted table from Pearce and Conger's (2003) book chapter on the research that has influenced our understanding of shared leadership is provided in Table 3. Developed by Hollander (1961), *Emergent leadership* is a phenomenon that occurs when members of a leaderless group select a leader based on their perceptions of the individual's ability to motivate goal accomplishment, increase member autonomy and acceptance, and assist in team cohesion (Pearce & Conger, 2003; Pearce & Sims, 2002). Though it focuses on the selection of a single appointed leader, this concept suggests that it is possible for "serial emergence" of multiple leaders if members perceive more than one team member as encompassing the aforementioned leader qualities (Pearce & Sims, 2002, p. 9).

Seers' (1989) *team member exchange* theory proposes that higher quality exchange relationships are positively related to individual status in the team. That is, those members with higher quality social exchange relationships with other members are more likely to hold high status in a team. From the perspective of shared leadership, this suggests that it is possible for individual members to gain status above and beyond that of formal leadership in a team (Pearce & Conger, 2003). It also suggests that individual team members may acquire high status depending on the task at hand. This means that influence can be transferred from one team member to another depending on their knowledge and skills.

*Leader-member exchange (LMX) theory* describes the process by which leaders develop unique relationships with followers depending on how well the follower performs, how similar the follower is to the leader, and the level of interpersonal attraction between the leader and follower (Jex & Britt, 2008b). *LMX theory* is similar to *team member exchange theory* in that both focus on exchange relationships between individuals. In the case of LMX, this suggests that those who have higher quality exchange relationships are considered part of the leader's in-group, whereas those with lower quality relationships are part of the out-group. Those that are part of the in-group are considered trusted confidants of the leader (Dansereau, Graen, & Haga, 1975). According to Pearce and Conger (2003), this means that leaders will vary their style depending on the subordinate they're interacting with. Thus, it is possible for followers to influence their leader's behavior (upward influence), suggesting that there can be horizontal influence from team members.

*Participative decision-making* is part of a model developed by Vroom and Yetton (1973) to describe situations in which followers should be involved in the decision making process. The model identifies circumstances under which shared leadership is likely to be more effective than

vertical leadership (Pearce & Conger, 2003). These circumstances include: 1) situations must require a higher need for decision making, 2) team members must have knowledge that adds to the leader’s knowledge, 3) team members must perceive that the decision is important, and 4) there must be minimal potential conflict as a result of the decision.

Building on the discussion of empowering leadership earlier, *self-leadership* (or self-management) describes the process by which individuals alleviate the need for high supervisory control (Manz & Sims, 1980; Pearce & Conger, 2003). As is the case with participative decision-making, self-leadership suggests that shared leadership can contribute to organizational goals beyond that of formal leadership (Pearce & Conger, 2003). This claim was supported

Table 3 Research Bases of Shared Leadership

<b>Theory/Research</b>	<b>Key Issues</b>	<b>Representative Authors</b>
Emergent Leadership	Leaders can “emerge” from leaderless group.	Hollander (1961)
Team Member Exchange	Team members develop models of status differentials between various team members.	Seers (1989)
Leader-Member Exchange	Examines the processes between leader and followers and the creation of in-groups and out-groups.	Graen (1976)
Participative Decision-Making	Under certain circumstances, it is advisable to elicit more involvement be subordinates in the decision-making process.	Vroom and Yetton (1973)
Self-Leadership	Employees, given certain conditions, are capable of leading themselves.	Manz and Sims (1980)

empirically when Pearce and Sims (2002) found that shared leadership accounted for more variance in team performance than vertical leadership in change management teams.

### **Outcomes of Shared Leadership**

Because shared leadership is conceptualized as a group process, much of the research has focused on applying shared leadership to group-level outcomes (Conger & Pearce, 2003). The primary focus of the research has been on examining the impact that shared leadership has on team effectiveness. Team effectiveness is a multilevel construct defined according to three criteria: 1) team output should meet or exceed performance standards, 2) team social processes should enhance the capability of team members to work on tasks, and 3) the group experience should satisfy personal needs of team members (Hackman, 1987).

One of the most commonly used models of team effectiveness in the shared leadership literature is McGrath's (1964) input-process-output (IPO) model (Wang et al., 2014). This model suggests that certain inputs influence team processes, which in turn results in differences in team output. Team inputs include individual level factors (skills, attitudes, personality characteristics), group level factors (group structure, level of cohesiveness, and group size), and environmental level factors (task characteristics, reward structure, and environmental stress). Team processes represent how team members perform tasks (e.g., the strategy used), and team outputs include performance (performance quality, speed of solution, and number of errors) and non-performance (member satisfaction, group cohesiveness, attitude change, and sociometric structure) outcomes.

## **Antecedents of Shared Leadership**

Though many studies have examined the relationship between shared leadership and various team effectiveness outcomes (e.g., Avolio et al., 1996; Bergman et al., 2012; Boies et al., 2010; Ensley et al., 2006; Pearce & Sims, 2002; Wang et al., 2014), relatively few studies have examined the antecedent variables (or input factors) that influence shared leadership development in teams (Carson et al., 2007; Hoch et al., 2010; Small & Rentsch, 2010). Researchers have criticized this lack of investigation and have called for more studies to examine variables that influence shared leadership development in teams (Carson et al., 2007; Conger & Pearce, 2003; Cox et al., 2003). In their seminal book on shared leadership, Conger and Pearce (2003) stated that researchers should strive to investigate the “factors that facilitate the display of shared leadership” in teams (p. 287). Carson et al. (2007) echoed this call in their study on shared leadership and team performance. They argued that the team composition characteristics such as experience, expertise, and personality have yet to be included in studies on shared leadership. They stated that these characteristics could affect the development of shared leadership and should be included in future research endeavors.

## **Team Personality, Shared Leadership, and Team Effectiveness**

A noteworthy contender for understanding how shared leadership develops in teams and influences team effectiveness is team personality composition. Team personality composition refers to the configuration of personality traits in teams that influences team processes and outcomes (Halfhill et al., 2005; Kozlowski & Bell, 2013). Team personality composition is a deep-level composition variable (i.e., referring to the underlying psychological characteristics of team members) that is believed to influence the amount of knowledge and skills team members

can apply toward a given task (Bell, 2007; Hackman, 1987). It is distinguished from other deep level composition variables (such as attitudes, values, and abilities) in that the focus is on the enduring team member personality characteristics that influence how effectively individual members work together and complete goal-relevant tasks (Bell, 2007).

Two of the most commonly used personality models in the past 35 years that have been utilized to understand work-related processes and outcomes are the Big Five and the Five Factor Model (FFM; Ashton & Lee, 2005; Bell, 2007; Halfhill et al., 2005; Jex & Britt, 2008a; Jex & Britt, 2008b; Judge et al., 2002; Peeters, Van Tuijl, Rutte, & Reymen, 2006). Since the 1980s, researchers have come to agree that personality variation could be summarized in terms of five relatively orthogonal factors (Lee & Ashton, 2004). These factors are commonly known as the Big Five and FFM personality traits. They were discovered through English lexical research, which originally identified a small number of descriptive adjectives (e.g., Digman & Takemoto-Chock, 1981) but later included the five personality traits outlined in both models (Goldberg, 1990, 1992; McCrae & Costa, 1987). Applied to the team level, these five traits refer to the amount that the team, as a whole, is extraverted, agreeable, conscientious, emotionally stable, and open to experiences (Barrick & Mount, 1991).

Research regarding these models has provided evidence for the predictability of all five team composition personality traits for a number of team effectiveness outcomes—most notably, team performance (Bell, 2007). However, there are inconsistencies with these findings. The relationships have varied across studies in both frequency and strength. Researchers attribute the differences in results to a number of moderating variables, including study setting (laboratory vs. field) and the operationalization of team personality composition (e.g., mean vs. variance) (Halfhill et al., 2005).

Halfhill et al. (2005) reviewed the literature on group personality composition and found that there was a stronger relationship between personality composition and team effectiveness in field studies than in laboratory studies. Similarly, Bell (2007) found through meta-analytic techniques that study setting moderates the strength of the team personality composition-team performance relationship. She found that relationships between personality factors and team performance were much stronger in field studies than in laboratory studies (to the point that there were no effects of personality on performance in lab settings). Though Bell pointed toward the potential bias of the types of teams used in the studies in her sample (i.e., 75.4% intellectual teams in laboratory studies and 75.81% of physical teams [e.g., production] in field settings), she noted that there was a clear moderating effect of study setting.

The operationalization of team personality composition is another moderator of the team personality composition–team effectiveness relationship. Organizational researchers have most commonly operationalized team personality composition according to one (or more) of four metrics: the mean, variability, minimum, and maximum score (Halfhill et al., 2005). According to Barrick, Stewart, Neubert, and Mount (1998), the mean score assumes that each individual possesses a certain amount of a given personality trait, and that the amount possessed adds to the collective pool of that trait. The amount of a particular trait (regardless of the distribution of it among members) will determine how that trait at the team level relates to team effectiveness outcomes. A downside in using this metric is that the mean may mask important information about the distribution of scores among members.

The variability score overcomes the problem associated with the mean by examining the distribution of scores and correlating it with team effectiveness. Variability scores are most appropriate if researchers want to examine how team personality composition homogeneity

relates to team effectiveness outcomes (Barrick et al., 1998). That is, do teams whose members tend to score more similarly on certain personality traits perform more effectively as a team? Or is it the differences in personality that combine in such a way that they compliment each other and aid to the effectiveness of teams?

Team minimum and maximum scores focus on the lowest or highest scores (respectively) on each of the five traits within a team. According to Barrick et al. (1998), the use of these metrics is based on research suggesting that individuals can significantly impact the performance of a group (e.g., Kenrick & Funder, 1988). For example, someone who scores low on a personality trait such as conscientiousness may negatively impact the performance of a team by not being highly concerned with the achievement of that team. Conversely, someone who scores very high on conscientiousness would be highly concerned with the performance of the team and may be critical for generating solutions to problems.

Steiner's (1972) task typology has been the most commonly used approach by which researchers have specified which of the four operationalizations best represents team personality composition (Bell, 2007). According to this typology, the operationalization chosen should be based off the type of task being performed and the individual influence each member has on the successful performance of that task (Steiner, 1972). For additive tasks such as moving a heavy object, the mean is the most appropriate operationalization because these tasks require the summing of resources for performance. For compensatory tasks, which require team members to combine resources in such a way that one team member's contribution compensates for another's (e.g., sales forecasting), the variability score would be most appropriate because these tasks might benefit from diverse inputs. Disjunctive tasks are those that require only one team member to perform well to succeed (e.g., problem solving) and are best represented by operationalizing

team personality composition using the maximum. Conjunctive tasks require each team member to perform at a minimally acceptable level for the team to succeed (e.g., assembly lines). Thus, the minimum score is the most appropriate operationalization (Barrick et al., 1998; Bell, 2007; Steiner, 1972; van Vianen & De Dreu, 2001).

One of the biggest criticisms of Steiner's typology is that it is applicable in laboratory settings but not much in real world settings, where team members work on multiple types of tasks (Bell, 2007). In a recent meta-analysis by Bell (2007), Steiner's typology was put to the test to see whether the team personality composition and team performance relationships would be stronger using the approach. Results suggested that this was not the case, and that most of the personality composition variables had the strongest relationship with team performance in field settings when operationalized as the mean. Additionally, the mean has been one of the most commonly used (and most highly regarded as important) operationalizations in research on team personality composition (Halfhill et al., 2005; Hoch et al., 2010). This study has conceptualized team personality composition as the mean score.

In an attempt to consolidate different findings in previous research, Bell (2007) conducted a meta-analysis on team personality composition and team performance using the FFM. She found that team conscientiousness and team openness to experience were positively associated with measures of team performance. That is, teams that are primarily composed of individuals who are achievement oriented and imaginative are more likely to have higher levels of performance. These results fall in line with previous research on personality, which at the individual level of analysis has identified conscientiousness and openness to experience as the most consistent predictors of job performance across studies (Barrick et al., 1998). Peeters et al. (2006) somewhat mirrored these results in their meta-analysis on personality and team

performance using the Big Five model. They found that team conscientiousness and agreeableness were associated with higher levels of team performance. This suggests that teams composed of individuals that are achievement oriented and cooperative are more likely to perform better.

Unlike conscientiousness and openness to experience, previous research has not identified agreeableness as a consistent predictor of job performance across studies. However, agreeableness has been found to be an important predictor in in jobs that involve significant interpersonal interaction (Barrick et al., 1998). Given that teams are composed of individuals that work together interdependently on tasks, it follows that team members should be more agreeable (courteous, flexible, etc.) towards each other to facilitate the process of working together.

Based on the literature above, I present the following hypotheses:

**Hypothesis 1a:** Team conscientiousness is positively correlated with team effectiveness.

**Hypothesis 1b:** Team openness to experience is positively correlated with team effectiveness.

**Hypothesis 1c:** Team agreeableness is positively correlated with team effectiveness.

In hypothesizing the relationships between team personality composition and shared leadership, the same consideration of operationalization previously discussed applies. Because shared leadership is measured according to the amount of influence team members have collectively, it follows that the more influence team members have on each other, the higher the level at which shared leadership occurs. As was the case with team personality composition and

team effectiveness, a measure of team personality that examines the mean of the personality traits would be appropriate.

Although no published studies on shared leadership have examined whether team conscientiousness, openness to experience, and/or agreeableness influence shared leadership development in teams, theoretical and empirical evidence of their influence on vertical leadership suggests potential connections. In their model of leader attributes and leader performance, Zaccaro (2007) proposed that personality characteristics interact with cognitive abilities and motivational values to influence the social intelligence, problem-solving skills, and expertise of leaders, which, in turn, influence leader emergence and effectiveness. Judge et al. (2002) provided evidence to support personality as a predictor of leadership in their meta-analysis. They found a moderately strong relationship between leadership (measured as a combination of leadership emergence and effectiveness) and all five traits outlined in the FFM. Additionally, conscientiousness, openness to experience, and agreeableness all had significant positive correlations with leadership.

With respect to the different leadership styles, relatively little work has been done to examine the relationship between style and conscientiousness, openness to experience, or agreeableness. An exception to this can be seen in the transactional-transformational leadership literature, where work has been done to examine the relationship between personality and transactional and transformational leadership. For example, in a meta-analysis on personality and both styles of leadership by Bono and Judge (2004), conscientiousness, openness to experience, and agreeableness had only small positive correlations with the transformational leadership composite. Additionally, agreeableness was the strongest predictor of the contingent reward

aspect of transactional leadership. However, the relationship was small and the credibility interval showed a great deal of variability.

Though there has not been much work done to examine the relationship between the rest of the leadership styles and team conscientiousness, openness to experience, or agreeableness, theoretical implications suggest potential connections with shared empowering leadership. As was mentioned earlier, empowering leadership emphasizes employee self-leadership. It implies that power is decentralized within a team and that team members engage in leading themselves. Empowering leaders are those who foster follower self-influence and self-leadership and place decision-making and control authority in the hands of followers (Cox et al., 2003). Shared empowering leadership occurs whenever the team as a whole influences members to engage in self-leadership. According to Pearce and Sims (2002), representative behaviors of empowering leaders include encouraging: independent action, opportunity thinking, teamwork, self-development, participative goal setting, and self-reward. Although (to my knowledge) no research has been conducted on the relationship between personality and empowering leadership (or SuperLeadership) or team personality and shared empowering leadership, there may be a potential connection between shared empowering leadership and team conscientiousness, openness to experience, and/or agreeableness.

According to Goldberg (1992), conscientious individuals are those who are organized, systematic, and thorough. McCrae and Costa (1987) described conscientious individuals as being achievement-oriented and self-disciplined. Since empowering leadership implies that leaders influence followers to set their own goals, evaluation methods, rewards, and development (Cox et al., 2003), it follows that teams in which the majority of members are highly conscientious would also be more likely to engage in shared empowering leadership. That is, conscientious

individuals are those who are motivated to engage in productive behaviors (a condition necessary for substitutes for leadership; Manz & Sims, 1980). Additionally, they would likely influence others in their group by setting an example for self-management or self-leadership.

Agreeable individuals are those who are trusting (Goldberg, 1992) as well as flexible and tolerant of others (McCrae & Costa, 1987). Because empowerment means delegating power and authority to others, those individuals who are more agreeable are more likely to trust those they influence with power, be flexible enough to delegate that power, and be tolerant of those who are not immediately accustomed to that power. In a similar vein, individuals that are open to experience are categorized as being curious and broad minded (McCrae & Costa, 1987) as well as intelligent (Goldberg, 1992). Those team members who are curious and broad minded enough to accept the opinions of others and who are considered credible due to their perceived intelligence also are more likely to influence them to develop self-leadership or self-management. The following hypotheses reflect the logic above:

**Hypothesis 2a:** Team conscientiousness is positively correlated with shared empowering leadership.

**Hypothesis 2b:** Team openness to experience is positively correlated with shared empowering leadership.

**Hypothesis 2c:** Team agreeableness is positively correlated with shared empowering leadership.

Examining the influence personality has on shared leadership would not be of practical importance without the consideration of team effectiveness outcomes. As stated earlier, research

on shared leadership and team effectiveness has provided evidence of its influence on various measures of team effectiveness. In a recent meta-analysis conducted by Wang et al. (2014), shared leadership was found to be positively associated with team effectiveness. The strength of this relationship was moderated by the style of leadership examined. For example, shared transactional leadership had a smaller relationship with team effectiveness than shared transformational and shared empowering leadership. Pearce and Sims (2002) conducted a study on the relative predictability of vertical versus shared leadership. They found that shared aversive and shared directive leadership had negative relationships with team effectiveness, whereas shared transformational leadership and shared empowering leadership had positive relationships with team effectiveness.

Given that shared empowering leadership is based on follower empowerment, it follows that those teams in which members felt encouraged to engage in important decision making and goal setting activities would be more likely to share their personal, educational, and functional knowledge with the team. This type of knowledge sharing would be more amenable towards change and innovation in teams (Wang et al., 2014). Change and innovation, in turn, would result in greater team effectiveness by helping the organization to remain competitive in the global, technologically based economy of today (Houghton et al., 2003; Pearce & Ensley, 2004). In fact, researchers have argued that creativity is a “vital driver” of team effectiveness (Mathieu, Maynard, Rapp, & Gilson, 2008, p.422). Research has also found that team creativity has a significant positive effect on performance (Gilson, Mathieu, Shalley, & Ruddy, 2005). Empowered teams are those that are proactive in seeking continuous improvement, revising work processes, and seeking innovative solutions to work problems (Kirkman & Rosen, 1999). The following hypothesis reflects this logic:

**Hypothesis 3:** Shared empowering leadership will be positively correlated with team effectiveness.

A model of the proposed relationships can be seen in Figure 1. As outlined in the hypotheses above, it is predicted that team conscientiousness, agreeableness, and openness to experience will be antecedents to shared empowering leadership and that team effectiveness will be an outcome of this process. That is, it is proposed that shared leadership will *mediate* the relationship between team conscientiousness, agreeableness, and openness to experience and team effectiveness. Establishing mediation will provide evidence in favor of personality being a viable predictor of shared leadership. Additionally, factoring personality into the analysis may provide a more accurate depiction of the shared empowering leadership-team effectiveness relationship. Since multiple regression analysis will be the primary means by which mediation will be examined, the effects of personality will be controlled to get a more accurate (i.e., less noisy) picture of the relationship.

A final reason for examining shared empowering leadership as a mediator is to explain the relatively weak relationships that have been found between team personality composition and team effectiveness (Bell, 2007). A potential limitation with this research is that it ignores how personality factors may impact the leadership abilities of team members, which previous research on shared leadership shows influences team effectiveness (Wang et al., 2014). For example, Cox et al. (2003) theorized in their model of shared leadership that team member characteristics influence how and what style of shared leadership develops in team, which impacts team effectiveness. Previous research on shared leadership does provide preliminary

support for this contention (e.g., Hoch et al., 2010). Carson et al. (2007) theorized that shared empowering leadership would mediate the relationship between team characteristics (such as team personality composition) and team effectiveness. Because the goal of the present study is to provide evidence to support this proposition, the final hypothesis states:

**Hypothesis 4a:** Shared empowering leadership mediates the relationships between team conscientiousness and team effectiveness.

**Hypothesis 4b:** Shared empowering leadership mediates the relationships between team agreeableness and team effectiveness.

**Hypothesis 4a:** Shared empowering leadership mediates the relationships between team openness to experience and team effectiveness.

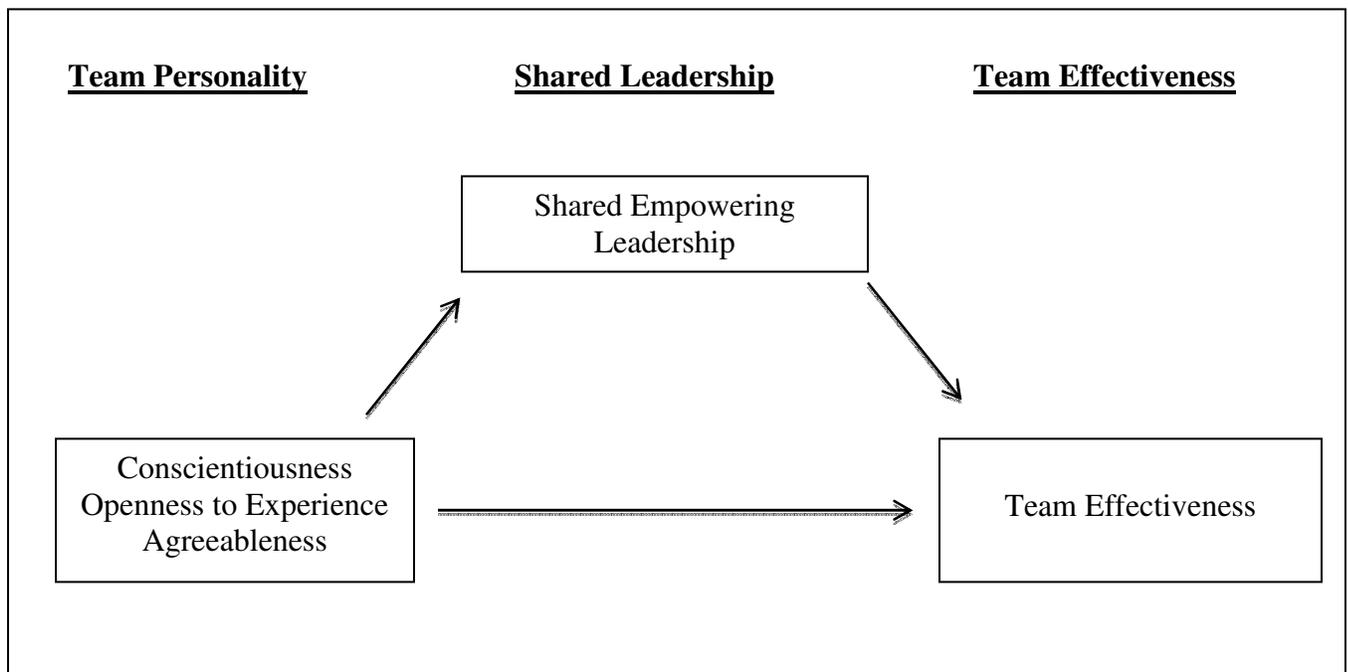


Figure 1 Model of Proposed Relationships

## CHAPTER 3

### METHOD

#### **Participants**

Participants consisted of adults between the ages of 19 and 72 years ( $M_{age} = 39$  years,  $SD = 5.71$  years) working as production Line Operators and Team Leaders (Direct Supervisors) in Assembly teams at an appliance manufacturing plant in North Georgia. Participants were recruited primarily by word of mouth. Team Leaders from 54 Assembly teams ( $M_{size} = 15$  members,  $SD = 4.21$  members, range: 3-25 members) were contacted about the study during their weekly communication meetings. They were told that the purpose of the study was to better understand the relationship between personality, leadership, and team effectiveness so Human Resources could enhance their team design efforts. They were given the questionnaires and instructed on how to administer them to their Line Operators. They were also asked to help data analysis efforts by completing a questionnaire on Team Effectiveness. Operators were recruited to the study by their Team Leaders.

Participants were primarily non-salary, blue-collar workers. Because job requirements specify proof of high school education (in the form of either a high school degree or General Education Development [GED] certificate), participants had at least a high school level education. The majority consisted of individuals living in the North Georgia and East Tennessee area. There were slightly more women ( $N = 315$ , 53.5%) than men ( $N = 273$ , 46.5%) who participated. Most Operators had been with the company between 1-5 years ( $N = 270$ , 48.9%).

Most Team Leaders had been with the company between 6-10 years ( $N = 31$ , 24.4%). Forty-seven Assembly Teams with an average of 17 members ( $M_{\text{size}} = 17$  members, range: 3-25 members) participated.

## Measures

*Team Personality.* The HEXACO personality inventory revised (HEXACO-PI-R) was used to measure team personality composition (see Appendix A). This scale contains 60 items grouped into six sub-scales: five that measure the Big Five/FFM factors and an additional sixth scale that measures honesty-humility. Though the Big Five model and FFM have been widely used, a major criticism of both in recent personality literature has been the generalizability of the five-factor structure across cultures (Ashton et al., 2004). For example, studies in Hungary (de Raad & Szirmák, 1994) and Italy (Di Blas & Forzi, 1998) examined a five factor structure that was dissimilar to the Big Five. Though four of the factors could be interpreted as variants of the Big Five factors, the fifth was referred to as Integrity in the Hungarian study and Trustworthiness in the Italian study. Other studies in different countries have found factors related to Trustworthiness and Integrity, including a factor defined in terms of sincerity/truth-loving versus boastful/dishonest (Germany; Angleitner & Ostendorf, 1989); a factor referred to Sincerity versus Boastfulness (Netherlands; de Raad, 1992); a factor interpreted as Truthfulness (South Korea; Hahn, Lee, & Ashton, 1999); and a factor interpreted as Honesty (France; Boies, Lee, Ashton, Pascal, & Nicol, 2001).

The empirical findings uncovering a personality factor related to honesty/sincerity, trustworthiness, and integrity have lead personality researchers to believe there is a sixth major personality trait that has been unaccounted for: Honesty-Humility (Ashton et al., 2004). In

response to the lexical research supporting a sixth factor, Lee and Ashton (2004) proposed a model that contained six personality dimensions, the HEXACO model. The HEXACO model includes traits related to Honesty-Humility (H), Emotionality (E), eXtraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O).

According to Lee and Ashton (2004), Honesty-Humility refers to the level of truthfulness and modesty an individual displays. It includes the facets sincerity, fairness, greed avoidance, and modesty. Emotionality refers to the tendency of an individual to feel anxious and desire deep, emotional bonds with individuals. It includes the facets fearfulness, anxiety, dependence, and sentimentality. Compared with the FFM, content related to sensitivity versus toughness is included in this factor (whereas it is included in the agreeableness factor in the FFM; Ashton & Lee, 2005). Extraversion refers to the level at which an individual is socially ambitious and enthusiastic. It includes facets expressiveness, social boldness, sociability, and liveliness. According to Lee and Ashton (2004), it is very similar to the Big Five Extroversion factor.

Agreeableness in the HEXACO model refers to the level at which an individual is cooperative with and forgiving of others. It includes the facets forgiveness, gentleness, flexibility, and patience. Compared with the FFM, content related to anger versus even tempered is included in this factor (Ashton & Lee, 2005). Conscientiousness refers to the level at which an individual is detail-oriented, hard working, and maintains self-control. It includes the facets organization, diligence, perfectionism, and prudence. This factor is almost identical to the Big Five Conscientiousness factor (Lee & Ashton, 2004). Openness to experience refers to the level at which an individual is appreciative, inquisitive, and creative. It includes the facets aesthetic appreciation, inquisitiveness, creativity, and unconventionality. Because the intellect content was not included in this factor (primarily because the creators believed overall intelligence was a

non-personality construct related to fluid intelligence), it differs from both the Big Five and FFM openness to experience factors.

In their introduction of the model, Lee and Ashton (2004) inspected the convergent (and discriminant, in the case of HEXACO emotionality and IPIP imperturbability) validity of the HEXACO Personality Inventory (HEXACO-PI) with the International Personality Item Pool (IPIP; Goldberg, 1999), a free measure of the Big Five factors. They found that the HEXACO factors were strongly correlated with the corresponding IPIP marker variables, with the strongest convergent validity between Extraversion (followed by Conscientiousness, Emotionality [divergent], Agreeableness, and Openness to Experience). Lee and Ashton also found that Honesty-Humility had relatively low correlations with the other HEXACO factors (providing evidence in favor it being a separate factor) and had high divergent validity with Primary Psychopathology (taken from the Primary Psychopathology Scale; Levenson, Kiehl, & Fitzpatrick, 1995). Additionally, the internal consistency reliabilities of each factor scale were high (Honesty-Humility:  $\alpha = .92$ , Emotionality:  $\alpha = .90$ , Extraversion:  $\alpha = .92$ , Agreeableness:  $\alpha = .89$ , Conscientiousness:  $\alpha = .89$ , Openness to Experience:  $\alpha = .90$ ).

Each of the scales contains 10 items that correspond with honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. The HEXACO-PI-R consists of 24 facet level traits grouped into the six dimensions. The response scales for each item fall along a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Hahn et al., 1999). This questionnaire was presented in paper format. Items for this scale were not modified for the present study.

*Shared Leadership.* Shared empowering leadership was assessed using the shared leadership empowering questionnaire developed by Pearce and Sims (2002) in their study on

shared versus vertical leadership (see Appendix B). This questionnaire assesses the extent to which teams engage in behaviors associated with empowering shared leadership. It contains 22 items that measure the extent to which the team as a whole engages in behaviors related to shared empowering leadership, including: encouraging self-reward, encouraging teamwork, participative goal setting, encouraging independent action, encouraging opportunity thinking, and encouraging self-development. This questionnaire was taken from the shared leadership questionnaire developed in the same study by Pearce and Sims (2002).

The shared leadership questionnaire was derived from a scale used by Cox and Sims (1996) and was modified to include a greater number of items increase the range of behaviors for each style. Chronbach's alpha for the five leadership behavior scales ranged from .72 to .87. Chronbach's alpha was .75 for the shared empowering leadership sub-scale. Additionally, Pearce and Sims (2002) used the James, Demaree, and Wolf (1984) procedure,  $r_{WG(J)}$ , to test the appropriateness of aggregating individual scores to the group level. The mean  $r_{WG(J)}$  was .88, indicating that consensus among respondents was high enough to justify aggregation. The  $r_{WG(J)}$  for the shared empowering leadership sub-scale was .91, also indicating that consensus among respondents was high enough to justify aggregation. Each item includes a five-point scale, with responses ranging from 1 (definitely not true) to 5 (definitely true). Items for this scale were only slightly modified for the study so that the wording was pared down and simpler vocabulary was used to accommodate the reading level of the Operators. This questionnaire was presented in paper format.

*Team Effectiveness.* Team effectiveness will be assessed using a questionnaire developed Pearce and Sims (2002) to measure different dimensions of team effectiveness (see Appendixes B & C). The effectiveness dimensions in the original questionnaire include output effectiveness,

quality effectiveness, change effectiveness, organizing and planning effectiveness, interpersonal effectiveness, value effectiveness, and overall effectiveness. The dimensions cover a wide range of effectiveness criteria and assess facets of performance and other outcomes as outlined in the McGrath (1964) IPO model of effectiveness. Chronbach's alpha for the questionnaire ranged from .85 to .98 depending on who provided the rating (manager, internal customer, or team members).

Items from this scale were modified as necessary to better reflect the manufacturing work environment. Any items that related solely to team effectiveness in change management teams (the sample used in the study) were omitted and replaced with items that correspond with team effectiveness in operating teams at a manufacturing plant. Specifically, questions related to quality, cost, and safety were added since these dimensions are of particular importance to top management at the manufacturing plant. Items from the original questionnaire related to output, value, interpersonal, and overall effectiveness were also included. Like the shared leadership behavior questionnaire, the responses to items on the team effectiveness questionnaire ranged from 1 (definitely not true) to 5 (definitely true). This questionnaire was presented in paper format.

*Control Variables.* Team size and a couple of measures of team demographic diversity were assessed to account for their potential influence on team effectiveness. Items asking participants to indicate their age and sex were included to account for age and sex diversity in the production teams. Additionally, measures of organizational tenure and team size were obtained to account for tenure diversity within teams and team size diversity between teams. Previous research on team heterogeneity suggests that age gender, and tenure diversity influence team effectiveness outcomes (Mathieu et al., 2008; Williams & O'Reilly, 1998). Team size has been

found to negatively impact team performance (Mueller, 2012) and to positively impact self-assessed team effectiveness. Each variable was included to partial out their effect on team effectiveness ratings.

## **Procedure**

As mentioned earlier, data were collected through questionnaires and distributed to Team Leaders during their weekly communication meeting. The purpose of the study and the instructions for administering the questionnaires to the team were outlined during this meeting. Team Leaders were told to distribute the questionnaires to their team during their next two weekly team meetings. They were also instructed to choose one Operator who would administer and collect the questionnaires while the Team Leader left the area so that their presence would have no influence on how Operators responded to the questionnaires. Team Leaders were asked to fill out the team effectiveness scale (see Appendix C) to reduce the potential effect of method bias. All questionnaires included instructions at the top of each document outlining the purpose of the study, the potential risks involved, a statement on how participation in the study is voluntary, a statement about confidentiality, instructions outlining how to complete the questionnaires, a statement about the approval of the questionnaire from IRB, and a statement on consent to completing the questionnaire.

In line with top management's goal to minimize time away from the production line, questionnaire administration occurred twice. That is, the set of questionnaires were split and distributed during two of each team's weekly team meetings. The rationale behind administering the questionnaires during two team meetings was to cut down the time taken away from each team meeting so that they can discuss other important workplace issues. Each data collection

period took no longer than ten minutes to complete (allowing Teams 20 minutes to conduct their meeting).

Assembly Operators were administered the HEXACO-PI-R during the first meeting and the shared empowering leadership and team effectiveness questionnaires during the second meeting. During the second team meeting, Team Leaders filled out a copy of the team effectiveness questionnaire in a separate area. Each time, the Team Leader explained the purpose of the questionnaires, picked an Operator to administer and collect the data, and left the area until all the questionnaires were completed. Once completed, the designated Operator informed the Team Leader and returned the questionnaires to Human Resources. Team Leaders returned their copy of the team effectiveness questionnaire to Human Resources separately.

## CHAPTER 4

### RESULTS

#### **Preliminary Analyses**

Means, standard deviations, and intercorrelations among the study variables are shown in Appendix D. First-order correlations found no significant relationships between the study variables. This suggests that the three personality variables (team agreeableness, conscientiousness, and openness to experience) are distinct factors from each other. Results indicate that the control variables (team size, age, tenure, and gender) are not significantly correlated with personality, shared leadership, or team effectiveness. In contrast to the study hypotheses, the intercorrelations also indicate that (1) the three personality variables are not significantly correlated with shared empowering leadership, (2) the three personality variables are not significantly correlated with team effectiveness, and (3) shared empowering leadership is not significantly correlated with team effectiveness.

Reliability was assessed using Chronbach's Alpha. Reliability estimates for openness to experience ( $\alpha = .77$ ), conscientiousness ( $\alpha = .72$ ), shared empowering leadership (.98), and team effectiveness ( $\alpha = .94$ ) were all above the acceptable value of .70 proposed by Nunnally (1978). Agreeableness fell slightly below ( $\alpha = .63$ ), suggesting caution in interpreting the results of analyses with respect to that variable.

Correlation analysis was conducted to examine the relationship between team effectiveness as rated by the Operators and by the Team Leaders to examine whether common

Table 4 Means, Standard Deviations, and Intercorrelations Among Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Team Size	15.82	4.21									
2. Gender	1.45	.22	.14								
3. Tenure	2.23	.67	-.17	-.24							
4. Age	39.75	5.71	-.07	-.16	.78**						
5. Agreeableness	33.57	1.89	.24	-.09	-.05	.07					
6. Conscientiousness	38.11	1.92	-.14	-.07	-.14	.06	.20				
7. Openness to Experience	31.70	2.45	.12	-.22	.03	.27	.18	.25			
8. Shared Empowering Leadership	69.07	7.70	-.04	.08	-.14	-.04	.19	.03	.15		
9. Team Effectiveness	97.86	10.11	.11	.26	-.07	-.08	.11	-.29	-.01	.18	

\*\* $p < .01$

method variance influenced the relationships between the study variables (Spector & Brannick, 2009). The goal was to find a significant, strong, positive relationship between team effectiveness ratings to provide evidence against common method variance. Given that many of the scale items in the questionnaires were evaluative in nature, and given that they were all self-report, it was important to establish that any significant relationships between were not due to the method of data collection used.

The results of correlation analysis revealed no significant relationship between the two measures of team effectiveness ( $r = .29, ns$ ). Team Leader ratings were, on average, higher than Operator ratings of team effectiveness ( $M_{\text{TeamLeader}} = 97.86, M_{\text{Operator}} = 89.04$ ). Given that Operators provided ratings for all five of the study variables (which could potentially result in common method variance), this finding raised concern about using Operator ratings of team effectiveness. To address this concern, I used team effectiveness as rated by Team Leaders (not Operators) to test the study hypotheses.

### **Test of Hypotheses**

The first set of hypotheses stated that (H1a) team conscientiousness, (H1b) team agreeableness, and (H1c) team openness to experience would be positively related to team effectiveness. Multiple regression was used to test these hypotheses. Scores on items related to conscientiousness, agreeableness, and openness to experience were summed to provide a domain score for each variable. Individual domain scores on the three personality variables and three of the control variables (gender [calculated as a proportion], age, and tenure) were then aggregated to the team level. Team effectiveness was not aggregated to the team level because it was based

on the single rating provided by the Team Leader. Team size was entered as a single number representing the size of each team.

Step one of the regression model included team size, gender, age, and tenure. Step two included the three personality characteristics (team agreeableness, conscientiousness, and openness to experience). Team effectiveness as measured by the Team Leader was the dependent variable (DV). The total number of teams measured was 33 ( $N = 33$  teams). Results of regression analyses revealed that the second model (with the control and personality variables) did not account for a significant amount of variance in team effectiveness ( $F = 1.02$ , *ns*). Results also showed that neither agreeableness nor openness to experience accounted for a significant amount of variance (Agreeableness:  $\beta = 1.91$ , *ns*; Openness to Experience:  $\beta = 1.02$ , *ns*).

Conscientiousness did account for a significant amount of variance in team effectiveness (Conscientiousness:  $\beta = -3.17$ ,  $p = .05$ ). However, the direction of the relationship was the opposite of what was hypothesized. Thus, the first hypothesis (H1a) was also not supported.

The second set of hypotheses stated that (H2a) team conscientiousness, (H2b) team agreeableness, and (H2c) team openness to experience would be positively related to shared empowering leadership. Multiple regression was used to test these hypotheses. Domain scores on the conscientiousness, agreeableness, and openness to experience sub-scales and scores on the shared empowering leadership scale were summed to provide an overall score for each variable. Individual scores three of the control variables (gender [calculated as a proportion], age, and tenure), all three personality variables, and shared empowering leadership were then aggregated to the team level. Team size was entered as a single number representing the size of each team.

Team size, gender, age, and tenure were entered as control variables in the first step of the regression model. The three personality characteristics (agreeableness, conscientiousness,

and openness to experience) were entered in the second step. The dependent variable was shared empowering leadership. The total number of teams measured was 36 ( $N = 36$  teams). Results of regression analyses revealed that the second model (with the control and personality variables) did not account for a significant amount of variance in shared empowering leadership ( $F = 0.55$ ,  $ns$ ). Results also showed that agreeableness, openness to experience, conscientiousness did not account for a significant amount of variance (Conscientiousness:  $\beta = -0.11$ ,  $ns$ ; Agreeableness:  $\beta = 1.32$ ,  $ns$ ; Openness to Experience:  $\beta = 0.64$ ,  $ns$ ). Thus, none of the second set of hypotheses was supported.

The third hypothesis (H3) stated that shared empowering leadership would be positively related to team effectiveness. I again used multiple regression to test the hypothesis. Individual scores on three of the control variables (gender [calculated as a proportion], age, and tenure) and shared empowering leadership were aggregated to the team level. Team effectiveness was not aggregated to the team level because it was based on the single rating provided by the Team Leader. Team size was entered as a single number representing the size of each team.

Team size, gender, age, and tenure were entered as control variables in the first step of the regression model. Step two included the independent variable, shared empowering leadership. Team effectiveness as rated by the Team Leaders was the dependent variable. The total number of teams measured was 31 ( $N = 31$  teams). Results of regression analyses revealed that the second model (with the control and shared empowering leadership variables) did not account for a significant amount of variance in team effectiveness ( $F = 0.40$ ,  $ns$ ). Results also showed that shared empowering leadership did not account for a significant amount of variance in team effectiveness ( $\beta = 0.21$ ,  $ns$ ). This hypothesis was not supported.

The fourth set of hypotheses (H4a-c) stated that shared empowering leadership mediated the relationships between the three personality variables and team effectiveness. To test whether this was the case, I planned to use the mediation test developed by Baron and Kenny (1986), which outlines a specific set of criteria by which to determine whether mediation had occurred. Unfortunately, because none of the IVs were significantly correlated with the mediator variable, and because the mediator variable was not significantly correlated with the DV when controlling for the IVs ( $\beta = 0.12, ns$ ), two of the three criteria were not met to establish mediation. I tested these findings using the procedure outlined by Preacher and Hayes (2004). The process procedure provided the same results. Taken together, these indicate that the fourth set of hypotheses was also not supported.

## CHAPTER 5

### DISCUSSION

The findings of the present study suggest that team personality agreeableness, conscientiousness, and openness to experience do *not* play a role in the emergence of shared leadership in teams. This was surprising given that previous research on leadership and personality suggests potential connections (Jex & Britt, 2008b; Judge et al., 2002). Even more surprising was the finding that neither the personality traits nor shared empowering leadership were significantly related to team effectiveness. Though research on shared leadership is still in its infancy, research on team personality composition has identified significant relationships between the Big Five and FFM personality traits with team effectiveness (Bell, 2007; Halfhill et al., 2005; van Vianen & De Dreu, 2001). Additionally, research on shared empowering leadership has identified a positive association between it and team effectiveness (Pearce & Sims, 2002; Wang et al., 2014).

One explanation for why personality did not predict shared empowering leadership is that there may have been environmental factors impacting how team personality composition influenced the emergence of shared leadership in teams. Though this speculation is contrary to leadership theory that utilizes the trait approach, empirical research suggests that agreeableness, conscientiousness, and openness to experience are not consistent predictors of leadership across study setting or leadership criteria (Bono & Judge, 2004; Judge et al., 2002). Researchers have interpreted these finding to suggest that situational variables may influence the relationship

between personality and leadership (Bono & Judge, 2004; De Hoogh, Den Hartog, & Koopman, 2005; Jex & Britt, 2008b). Potentially a more contingency-based approach accounting for environmental factors, such as the tasks being performed or the skill level of the team members, could reveal a significant relationship.

Another potential reason team personality composition did not predict shared empowering leadership is that other team composition characteristics have a greater influence on shared leadership. For example, team composition variables that have been commonly examined in the literature include team values (e.g., collectivism and preference for teamwork) and abilities (such as general mental ability and emotional intelligence; Bell, 2007). Given that shared empowering leadership functions best under the conditions that team members are motivated to engage in productive behaviors (a potential team value) and have the necessary task-related skills and abilities, either of the other two team personality composition variables could be predictors of shared empowering leadership.

A final reason team personality composition did not predict shared empowering leadership is that those particular team personality composition variables may be more closely associated with another style of shared leadership. For example, the transformational leadership model outlines a set of behaviors that are associated with transformational leaders (Bass & Bass, 2008). These include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Agreeable teams consist of members who are more likely to exhibit forgiveness, gentleness, flexibility, and patience with others (Lee & Ashton, 2004). This could be essential in providing individualized consideration to team members. Conscientious team members are those who exhibit organization, diligence, perfectionism, and prudence. These characteristics align well with, and could predict, idealized influence. Openness to experience,

which includes behaviors associated with appreciation, inquisitiveness, creativity, and unconventionality, could easily align with idealized influence, inspirational motivation, and intellectual stimulation. Thus, there may be another leadership style that is more strongly predicted by team agreeableness, conscientiousness, and/or openness to experience.

One of the most surprising findings was that team conscientiousness negatively predicted Team Leader ratings of team effectiveness, which is counter to the relationships found in previous research (Peeters et al., 2006; Prewett, Walvoord, Stilson, Rossi, & Brannick, 2009). However, practical and operationalization issues/implications may explain these results.

With respect to the practical reasons, time and production pressures at the manufacturing plant may have influenced Team Leader ratings. Each production line is required to produce a certain yield each shift. Often, these yield goals require Operators to work at 102-105% to ensure that, with downtime and other issues, they make their yield. For the Operators and the company, time is money. The slower a line produces its units, the worse their performance is perceived by middle to upper management. It could be that teams where individual members are more conscientious are also more likely to be perceived by their Team Leader as perfectionists. Given that perfectionists are willing to take more time to ensure that their work is perfect, this could conflict with production pressures to make as many units as possible. Thus, Team Leaders may have been more inclined to rate those teams who were more conscientious (and probably more likely to take time) as less effective.

Choosing the mean as the single operationalization for each personality trait also may have influenced the strength and direction of the relationships. This applies not only to the unexpected relationship between team conscientiousness and team effectiveness, but all the team personality composition-team effectiveness relationships. There are four major

operationalizations that have been used in the majority of team personality composition research: mean, variability, minimum, and maximum (Barrick et al., 1998; Bell, 2007; Halfhill et al., 2005). Though this study only utilized the mean, it could be that the variability, minimum, or maximum score were more appropriate for some traits. For example, Peeters et al. (2006) found in their study of personality and team performance that variability in conscientiousness and agreeableness negatively predicted team performance. That is, those teams in which members were more heterogeneous with respect to conscientiousness and agreeableness were also more likely to be rated as lower performers. Additionally, Bell (2007) found through meta-analytic procedures that agreeableness was most strongly related to team performance in field studies when operationalized as the minimum score.

Another surprising finding was that shared empowering leadership was not significantly related to team effectiveness. This can be explained by examining the type of ratings that were used. According to Wang et al. (2014), the referent of measurement and the team effectiveness criteria used can influence the relationship between shared leadership and team effectiveness. Referent of measurement refers to the how shared leadership was measured. There are three common referents that have been used: (1) team members evaluating the team as a whole on shared leadership (the method used in this study); (2) each member rating other members on their leadership and influence abilities (in which social networking analysis is used and calculations of network density and/or centralization produced); and (3) each member rating themselves on leadership, with scores aggregated to the team level. According to the results of the meta-analysis by Wang et al., the strongest relationships with team effectiveness were found when the latter two methods were used. This could partly explain why the results of this study were not significant.

Wang et al. (2014) noted that different team effectiveness criteria also influence the strength of the shared leadership-team effectiveness relationship. These include attitudinal outcomes (e.g., job satisfaction), behavioral processes and emergent states (e.g., cohesion), subjective performance (e.g., subjective ratings), and objective performance (e.g. production numbers). According to the results of their meta-analysis, subjective performance (used in this study) produced the second to lowest relationship with team effectiveness (following objective performance). The highest relationship was produced when observed behavioral processes were used and the source of shared leadership ratings was the same (followed by attitudinal outcomes). Notably, the correlation was lower when ratings were made by a different source than that of shared leadership. Though there is concern with respect to common method variance, shared empowering leadership was significantly positively related to shared leadership in this study when team effectiveness was measured using Operator ratings ( $\beta = 0.63, p < .001$ ). This could also partly explain why results were not significant.

The non-significant relationship between shared empowering leadership and team effectiveness may also relate to the individual providing the rating for team effectiveness. Pearce and Sims (2002) (the source of the shared empowering leadership scale used in the present study) examined all five styles of shared leadership in relation to team effectiveness in change management teams. Although shared empowering leadership was significantly related to team effectiveness when both were rated by the team, it was not significantly related when rated by the team leaders or their customers. Their results somewhat reflect the present results, suggesting that the rater of team effectiveness influenced the strength and significance of that relationship.

## **Limitations**

There are a number of limitations associated with the present study. First, the study sample may not have met the conditions for shared empowering leadership to occur in the Assembly teams. These conditions include: being knowledgeable about the organization, having necessary task-related skills and abilities, and being motivated to engage in productive behaviors (Pearce & Sims, 2002). Because this sample consisted primarily of employees who had been with the company less than five years, they may not have meet the criteria for being adequately knowledgeable about the organization. Additionally, Operators at that particular plant are often moved from line to line, depending on the plant's need to fill positions. It is possible that a portion of participants were in positions for which they did not completely have the necessary task-related skills.

A second limitation is that only one style of shared leadership was examined as a mediator between team personality composition and team effectiveness. It is possible that other styles, such as shared transactional or shared transformational leadership, are more strongly predicted by team agreeableness, conscientiousness, and openness to experience. Additionally, the proposed relationships may have been stronger had overall shared leadership been assessed instead of shared empowering leadership. Research on shared leadership has support for this second contention. For example, Wang et al. (2014) found in their meta-analysis that shared leadership measured in a generic or overall sense (as opposed to a particular type) was the most strongly related to team effectiveness. This may have influenced the strength of the relationship between shared leadership and team effectiveness in the present study.

The ratings provided by the Operators could also have been influenced by the identifying nature of the demographic information provided. Because participants' month and year of birth

were used to pair the surveys between administrations, there was some hesitation from Operators to complete the questionnaires honestly. A number of Operator's fudged their demographic data (e.g., providing false birth dates), completed questionnaires by filling in only 3's (in the case of the HEXACO) or 4's (in the case of shared empowering leadership and team effectiveness), and provided informal feedback on the surveys about them being identifiable. This more than likely led to dishonest responses and influenced the reliability of the surveys.

The manner in which shared leadership was measured may also have limited the findings. As mentioned earlier, there are several ways to measure shared leadership (Wang et al., 2014). It can be measured using network analysis measures such as network density and centrality, by asking team members to rate the team as a whole on leadership, and by asking team members to rate themselves on leadership and aggregating the scores to the team. This study utilized the second method, which Wang et al. (2014) found produced the weakest relationship with team effectiveness. The results of this study could have been influenced by the method chosen to measure shared leadership.

The study may also have been limited by the manner in which team personality composition was operationalized. Though team personality was operationalized as the mean, it could have been operationalized as the variability, minimum, maximum, or other measure (Bell, 2007). Though many researchers have chosen to operationalize team personality composition as the mean, there is much debate on the appropriateness of this measure. For example, Barrick et al. (1998) pointed out that one downfall of using the mean is that important information about the homogeneity of a trait in a team is masked. Additionally, Bell (2007) noted that the appropriateness of operationalization depends on the specific team composition variable of interest. Thus it could be that choosing to operationalize team personality composition only as

the mean may have influenced the strength and direction of the relationships between personality and team effectiveness.

Another issue is that the present study used team effectiveness ratings from Team Leaders, which could have influenced the relationships between the study variables. For instance, whether the ratings for shared leadership and team effectiveness are gathered from the same source impacts the strength of that relationship. Additionally, team effectiveness criteria can influence the strength of the relationships. As mentioned earlier, Wang et al. (2014) found that when subjective team effectiveness measures were used, and the source of the ratings were different than those for shared leadership, the relationship was much lower than those found with other criteria and/or sources. This suggests that the type of team effectiveness criteria used could have influenced the relationships of this study. When testing the study hypotheses using Operator rated team effectiveness as the DV, there were significant positive relationships with team agreeableness ( $\beta = 1.55, p < .05$ ) and shared empowering leadership ( $\beta = 0.63, p < .001$ ). Though these results could have been influenced by common method variance, they do suggest that the type of team effectiveness ratings influenced the relationships in this study.

Finally, there may have been reliability issues with the HEXACO-PI-R personality variables. Though team conscientiousness ( $\alpha = .72$ ) and openness to experience ( $\alpha = .77$ ) met the .70 Chronbach's alpha criteria outlined by Nunnally (1978), team agreeableness ( $\alpha = .63$ ) did not. This suggests that there was relatively low internal consistency for the personality variables. There are two major implications from this. The first is that any significant results including team agreeableness should be taken with caution. Given that the only significant results found were when Operator rated team effectiveness was used, this first implication is not of critical importance. The second implication is that ratings on the HEXACO-PI-R were not as consistent

as previous research has shown them to be (Ashton & Lee, 2008). This may suggest that some other factor (e.g., disinterest, item comprehension) may have impacted the personality ratings of the Operators. Thus, the significant result found should be taken with caution.

## **Future Research**

There are several avenues for future research on team personality, shared leadership, and team effectiveness. First, future research should focus on examining other team personality composition variables as predictors of shared leadership. For instance, this study examined agreeableness, conscientiousness, and openness to experience as predictors of shared leadership. Some alternative team personality composition variables that could be examined include values (e.g., collectivism) and abilities (e.g., general mental ability; Bell, 2007). For example, future research might examine affinity toward productive behaviors or team empowerment as predictors of shared empowering leadership and team effectiveness. Previous models of shared leadership (e.g., Cox et al., 2003) and research on team (e.g., Kirkman & Rosen, 1997) suggest potential connections.

In the shared leadership model outlined by Cox et al. (2003) for new product development teams, team characteristics such ability are proposed to influence the development of shared leadership in teams, which in turn influences team effectiveness outcomes. This association between ability and shared leadership is proposed to occur because team members will need to rely less on formal leaders due to the fact that they encompass the necessary attributes to complete goal-related tasks. Thus, team member abilities could influence shared leadership development in teams. Additionally, Carson et al. (2007) stipulated that teams who are highly empowered would be more likely to develop shared leadership because they have

more autonomy, work meaningfulness, perceived potency, and perceived impact. Thus, they are more likely to rely on each other for influence than on the formal leader of the group.

A second avenue for research is the examination of personality in relation to different styles of shared leadership. One could examine how personality traits in the Big Five or FFM relate to shared aversive, directive, transactional, or transformational leadership (Pearce & Sims, 2002). For example, the transformational leadership model includes idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Bass, 2008). Team emotionality might negatively predict this style of leadership because team members who are more emotional are less likely to form meaningful bonds with other team members, negatively impacting individualized consideration (Lee & Ashton, 2004). Teams that are more extraverted would likely exhibit a more transformational style of leadership because they would be more charismatic, which is directly tied to idealized influence. Agreeable team members might be more likely to provide individualized consideration to team members, whereas conscientious members (who are characterized by organization, diligence, perfectionism, and prudence) would likely exhibit idealized influence on each other. Teams who are characterized by openness to experience (appreciation, inquisitiveness, creativity, and unconventionality) would likely display idealized influence, inspirational motivation, and intellectual stimulation towards other members. Thus, future research should examine personality as a predictor of the other styles of shared leadership.

A final avenue for research is the examination of other antecedent variables outside of personality. Future research could examine other team characteristics such as team diversity, maturity, and proximity as predictors of shared leadership. Characteristics of the formal leader (such as boundary management, leadership support, and empowerment) could also be examined

as potential influences on the development of shared leadership in teams (Cox et al., 2003). Additionally, contextual factors such as reward and recognition systems, leadership training, and the nature of the task could be examined as potential antecedents of shared leadership (Carson et al., 2007; Hackman, 1987).

## **Conclusion**

As organizations become more reliant on work teams to accomplish organizational goals, the need to understand characteristics that influence the leadership abilities of work teams becomes greater. The present study examined the relationship between team personality characteristics and shared leadership in teams. It also examined those personality and leadership variables in relation to team effectiveness. Data were gathered from Assembly Operators working on manufacturing teams at a manufacturing plant. Although results did not provide support for using personality to predict shared leadership, the study limitations suggest areas for future research. This study represents a preliminary attempt in understanding what personality characteristics predict shared leadership. It also provides an impetus for future research examining other team personality characteristics.

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APPENDIX A  
IRB APPROVAL LETTER

**Institutional Review Board**

Dept. 4915  
615 McCallie Avenue  
Chattanooga, TN 37403-2598  
Phone: (423) 425-5867  
Fax: (423) 425-4052  
instrb@utc.edu

**MEMORANDUM**

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TO: Nicole Wild  
**IRB #15-020**  
Dr. Brian O'Leary

FROM: Lindsay Pardue, Director of Research Integrity  
Dr. Bart Weathington, IRB Committee Chair

DATE: March 3, 2015

SUBJECT: IRB #15-020: Antecedent Conditions of Shared Leadership: An Examination of Team Personality Composition, Shared Leadership, and Team Effectiveness

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

***The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #15-020.***

Please remember that you must complete a Certification for Changes, Annual Review, or Project Termination/Completion Form when the project is completed or provide an annual report if the project takes over one year to complete. The IRB Committee will make every effort to remind you prior to your anniversary date; however, it is your responsibility to ensure that this additional step is satisfied.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page <http://www.utc.edu/irb> or email [instrb@utc.edu](mailto:instrb@utc.edu)

Best wishes for a successful research project.

APPENDIX B  
HEXACO-PI-R (FOR OPERATORS)

## ANTECEDANT CONDITIONS OF SHARED LEADERSHIP

This survey will gather information exploring the relationship between personality traits among team members, team leadership, and team effectiveness. The survey is designed to help Human Resources' team development efforts by giving us a better understanding of individual team personality characteristics and how they relate to the leadership abilities of team members and team effectiveness. This survey is also designed to aid research initiatives at the University of Tennessee at Chattanooga.

Only Niki Wild, Principal Investigator and Human Resources Intern, will have access to the completed questionnaires. Once the data from the questionnaires is entered and analyzed, the de-identified results (analyzed results without identifying information) will be kept in Human Resources. If you have any questions about the survey or would like to see the results, you can contact Scott Reece in Human Resources.

Participation in this study is voluntary; there is no penalty for not participating. Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. The list connecting your team name to this number will be kept in a locked file in my faculty supervisor's office. When the study is completed and the data have been analyzed, the list and the surveys will be destroyed. You have the right to withdraw from the study at anytime without consequence.

The survey has been approved as acceptable by the University of Tennessee – Chattanooga's Institutional Review Board (IRB). If you have questions about the IRB, its policies or procedures, or your rights as a participant in this survey, you can contact Dr. Bart Weathington at (423) 425-4289 or email instrb@utc.edu.

Returning a completed questionnaire will be considered as you giving your consent to participate in this survey.

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Carefully read the questions on the front and back of this sheet and answer them to the best of your ability. Write down your team number and check the appropriate boxes. You will be asked to complete two shorter surveys in the next team meeting. Please write down the month and year you were born so that we can group the surveys.

Team: \_\_\_\_\_ Month and year of birth: \_\_\_\_\_

Gender: \_\_\_Female \_\_\_Male

Length of Service: \_\_\_1-5 years \_\_\_6-10 years \_\_\_11-15 years \_\_\_16-20 years \_\_\_greater than 20 years

Please read each statement, decide how much you agree, and write your response in the space next to the statement using the scale below. Answer every statement, even if you are not completely sure of your response.

*1 = strongly disagree    2 = disagree    3 = neither agree nor disagree    4 = agree    5 = strongly agree*

### HEXACO-PI-R

1 \_\_\_\_\_ I would be very bored by a visit to an art museum.

- 2 \_\_\_\_\_ I plan ahead and organize things to avoid scrambling at the last minute.
- 3 \_\_\_\_\_ I rarely hold a grudge, even against people who have badly wronged me.
- 4 \_\_\_\_\_ I feel pretty satisfied with myself overall.
- 5 \_\_\_\_\_ I would feel afraid if I had to travel in bad weather conditions.
- 6 \_\_\_\_\_ I would not use flattery to get a raise or promotion at work, even if I thought it would succeed.
- 7 \_\_\_\_\_ I am interested in learning about the history and politics of other countries.
- 8 \_\_\_\_\_ I often push myself very hard when trying to achieve a goal.
- 9 \_\_\_\_\_ People sometimes tell me that I am too critical of others.
- 10 \_\_\_\_\_ I rarely express my opinions in group meetings.
- 11 \_\_\_\_\_ I sometimes cannot help worrying about little things.
- 12 \_\_\_\_\_ If I knew that I would never get caught, I would be willing to steal a million dollars.
- 13 \_\_\_\_\_ I would enjoy creating a work of art such as a novel, song, or painting.
- 14 \_\_\_\_\_ When working on something, I do not pay much attention to small details.
- 15 \_\_\_\_\_ People sometimes tell me that I am too stubborn.
- 16 \_\_\_\_\_ I prefer jobs that involve social interaction to those that involve working alone.
- 17 \_\_\_\_\_ When I suffer from a painful experience, I need someone to make me feel better.
- 18 \_\_\_\_\_ Having a lot of money is not especially important to me.
- 19 \_\_\_\_\_ I think that paying attention to radical (extremist) ideas is a waste of time.
- 20 \_\_\_\_\_ I make decisions based on the feeling of the moment rather than on careful thought.
- 21 \_\_\_\_\_ People think of me as someone with a quick temper.
- 22 \_\_\_\_\_ On most days, I feel cheerful and optimistic.
- 23 \_\_\_\_\_ I feel like crying when I see other people crying.
- 24 \_\_\_\_\_ I think that I am entitled to more respect than the average person is.
- 25 \_\_\_\_\_ If I had the opportunity, I would like to attend a classical music concert.
- 26 \_\_\_\_\_ When working, I sometimes have difficulties due to being disorganized.
- 27 \_\_\_\_\_ My attitude toward people who have treated me badly is "forgive and forget".
- 28 \_\_\_\_\_ I feel that I am an unpopular person.
- 29 \_\_\_\_\_ When it comes to physical danger, I am very fearful.
- 30 \_\_\_\_\_ If I want something from someone, I will laugh at that person's worst jokes.
- 31 \_\_\_\_\_ I have never really enjoyed looking through an encyclopedia.

- 32 \_\_\_\_\_ I do only the minimum amount of work needed to get by.
- 33 \_\_\_\_\_ I tend to be lenient in judging other people.
- 34 \_\_\_\_\_ In social situations, I am usually the one who makes the first move.
- 35 \_\_\_\_\_ I worry a lot less than most people do.
- 36 \_\_\_\_\_ I would never accept a bribe, even if it were very large.
- 37 \_\_\_\_\_ People have often told me that I have a good imagination.
- 38 \_\_\_\_\_ I always try to be accurate in my work, even if it takes more time.
- 39 \_\_\_\_\_ I am usually quite flexible in my opinions when people disagree with me.
- 40 \_\_\_\_\_ The first thing I always do in a new place is make friends.
- 41 \_\_\_\_\_ I can handle difficult situations without needing emotional support from anyone else.
- 42 \_\_\_\_\_ I would get a lot of pleasure from owning expensive luxury goods.
- 43 \_\_\_\_\_ I like people who have unconventional views.
- 44 \_\_\_\_\_ I make a lot of mistakes because I don't think before I act.
- 45 \_\_\_\_\_ Most people tend to get angry more quickly than I do.
- 46 \_\_\_\_\_ Most people are more upbeat and dynamic than I generally am.
- 47 \_\_\_\_\_ I feel strong emotions when someone close to me is going away for a long time.
- 48 \_\_\_\_\_ I want people to know that I am an important person of high status.
- 49 \_\_\_\_\_ I don't think of myself as the artistic or creative type.
- 50 \_\_\_\_\_ People often call me a perfectionist.
- 51 \_\_\_\_\_ Even when people make a lot of mistakes, I rarely say anything negative.
- 52 \_\_\_\_\_ I sometimes feel that I am a worthless person.
- 53 \_\_\_\_\_ Even in an emergency I wouldn't feel like panicking.
- 54 \_\_\_\_\_ I wouldn't pretend to like someone just to get that person to do favors for me.
- 55 \_\_\_\_\_ I find it boring to discuss philosophy.
- 56 \_\_\_\_\_ I prefer to do whatever comes to mind, rather than stick to a plan.
- 57 \_\_\_\_\_ When people tell me that I'm wrong, my first reaction is to argue with them.
- 58 \_\_\_\_\_ When I'm in a group of people, I'm often the one who speaks on behalf of the group.
- 59 \_\_\_\_\_ I remain unemotional even in situations where most people get very sentimental.
- 60 \_\_\_\_\_ I'd be tempted to use counterfeit money, if I were sure I could get away with it.

APPENDIX C  
SHARED EMPOWERING LEADERSHIP AND TEAM  
EFFECTIVENESS QUESTIONNAIRES  
(FOR OPERATORS)

This survey will gather information exploring the relationship between personality traits among team members, team leadership, and team effectiveness. The survey is designed to help Human Resources' team development efforts by giving us a better understanding of individual team personality characteristics and how they relate to the leadership abilities of team members and team effectiveness. This survey is also designed to aid research initiatives at the University of Tennessee at Chattanooga.

Only Niki Wild, Principal Investigator and Human Resources Intern, will have access to the completed questionnaires. Once the data from the questionnaires is entered and analyzed, the de-identified results (analyzed results without identifying information) will be kept in Human Resources. If you have any questions about the survey or would like to see the results, you can contact Scott Reece in Human Resources.

Participation in this study is voluntary; there is no penalty for not participating. Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. The list connecting your team name to this number will be kept in a locked file in my faculty supervisor's office. When the study is completed and the data have been analyzed, the list and the surveys will be destroyed. You have the right to withdraw from the study at anytime without consequence.

The survey has been approved as acceptable by the University of Tennessee – Chattanooga's Institutional Review Board (IRB). If you have questions about the IRB, its policies or procedures, or your rights as a participant in this survey, you can contact Dr. Bart Weathington at (423) 425-4289 or email instrb@utc.edu.

Returning a completed questionnaire will be considered as you giving your consent to participate in this survey.

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Carefully read the questions on the front and back of this sheet and answer them to the best of your ability. Write down your team number and check the appropriate boxes. Please write down the month and year you were born so that we can group this survey with the survey you completed in your last meeting.

Team: \_\_\_\_ Month and year of birth: \_\_\_\_\_

Gender: \_\_\_\_Female \_\_\_\_Male

Length of Service: \_\_1-5 years \_\_6-10 years \_\_11-15 years \_\_16-20 years \_\_greater than 20 years

Please read each statement, decide how much you agree, and write your response in the space next to the statement using the scale below. Answer every statement, even if you are not completely sure of your response.

*1 = very untrue      2 = untrue      3 = neither true nor untrue      4 = true      5 = very true*

### **Shared Empowering Leadership Questionnaire**

1 \_\_\_\_\_ My team members encourage me to work together with other members of the team.

- 2 \_\_\_\_\_ My team members and I work together and discuss what my performance goals should be.
- 3 \_\_\_\_\_ My team members encourage me to search for solutions to my problems without help from my team leader.
- 4 \_\_\_\_\_ My team members advise me to look for the opportunities contained in the problems I face.
- 5 \_\_\_\_\_ My team members encourage me to develop myself.
- 6 \_\_\_\_\_ My team members encourage me to seek out educational opportunities.
- 7 \_\_\_\_\_ My team members urge me to reward myself when I have successfully completed a major task on the line.
- 8 \_\_\_\_\_ My team members encourage me to treat myself when I do a task on the line very well.
- 9 \_\_\_\_\_ My team members urge me to work as a team with other members.
- 10 \_\_\_\_\_ My team members and I reach agreement on my performance goals.
- 11 \_\_\_\_\_ My team members encourage me to find solutions to my problems without their direct input.
- 12 \_\_\_\_\_ My team members encourage me to view unsuccessful performance as a chance to learn.
- 13 \_\_\_\_\_ My team members encourage me to develop my skills and abilities.
- 14 \_\_\_\_\_ My team members encourage me to learn by challenging myself.
- 15 \_\_\_\_\_ My team members encourage me to give myself a pat on the back when I successfully meet a new challenge.
- 16 \_\_\_\_\_ My team members advise me to coordinate my efforts with other team members.
- 17 \_\_\_\_\_ My team members work with me to develop my performance goals.
- 18 \_\_\_\_\_ My team members advise me to solve problems when they pop up without always getting a stamp of approval.
- 19 \_\_\_\_\_ My team members urge me to assume responsibilities on my own.
- 20 \_\_\_\_\_ My team members urge me to think of problems as opportunities rather than obstacles.
- 21 \_\_\_\_\_ My team members encourage me to seek out opportunities to learn.

**Team Effectiveness Questionnaire**

- 22 \_\_\_\_\_ My team members encourage me to learn new things.
- 23 \_\_\_\_\_ The team delivers on its required production goals.
- 24 \_\_\_\_\_ The team delivers quality work.
- 25 \_\_\_\_\_ The team eliminates root problems, not just symptoms.
- 26 \_\_\_\_\_ The team works to keep others safe.
- 27 \_\_\_\_\_ The team actively tries to keep production costs down.
- 28 \_\_\_\_\_ The team communicates its progress.
- 29 \_\_\_\_\_ The team's contribution to the company is very valuable.
- 30 \_\_\_\_\_ The team is highly effective.

- 31 \_\_\_\_\_ The team delivers on its required production goals on time.
- 33 \_\_\_\_\_ The quality of the team's output is very high.
- 33 \_\_\_\_\_ The team faces problems related to safety effectively.
- 34 \_\_\_\_\_ The team works to keep themselves safe.
- 35 \_\_\_\_\_ The team does a good job keeping the number of scrap parts down.
- 36 \_\_\_\_\_ The team proactively communicates its performance.
- 37 \_\_\_\_\_ The team makes valuable contributions to the company.
- 38 \_\_\_\_\_ The team does very good work.
- 39 \_\_\_\_\_ The team provides a volume of work consistent with established production standards.
- 40 \_\_\_\_\_ The team performs duties accurately and consistently.
- 41 \_\_\_\_\_ The team actively looks for ways to keep their area safe.
- 42 \_\_\_\_\_ The team works to ensure that the number of scrap parts is at a minimum.
- 43 \_\_\_\_\_ The team keeps everyone informed.
- 44 \_\_\_\_\_ The contributions of this team are very valuable to the company.
- 45 \_\_\_\_\_ The team does a very good job.
- 46 \_\_\_\_\_ The team is highly effective at implementing solutions to problems on the line.

APPENDIX D  
TEAM EFFECTIVENESS QUESTIONNAIRE  
(FOR TEAM LEADERS)

This survey will gather information exploring the relationship between personality traits among team members, team leadership, and team effectiveness. The survey is designed to help Human Resources' team development efforts by giving us a better understanding of individual team personality characteristics and how they relate to the leadership abilities of team members and team effectiveness. This survey is also designed to aid research initiatives at the University of Tennessee at Chattanooga.

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Returning a completed questionnaire will be considered as you giving your consent to participate in this survey.

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Carefully read the questions on the front and back of this sheet and answer them to the best of your ability. Write down your team number and check the appropriate boxes.

Team: \_\_\_\_

Gender: \_\_\_\_Female \_\_\_\_Male

Length of Service: \_\_1-5 years \_\_6-10 years \_\_11-15 years \_\_16-20 years \_\_greater than 20 years

Please read each statement, decide how much you agree, and write your response in the space next to the statement using the scale below. Answer every statement, even if you are not completely sure of your response.

*1 = very untrue      2 = untrue      3 = neither true nor untrue      4 = true      5 = very true*

### **Team Effectiveness Questionnaire**

- 1 \_\_\_\_\_ The team delivers on its required production goals.
- 2 \_\_\_\_\_ The team delivers quality work.
- 3 \_\_\_\_\_ The team eliminates root problems, not just symptoms.

- 4 \_\_\_\_\_ The team works to keep others safe.
- 5 \_\_\_\_\_ The team actively tries to keep production costs down.
- 6 \_\_\_\_\_ The team communicates its progress.
- 7 \_\_\_\_\_ The team's contribution to the company is very valuable.
- 8 \_\_\_\_\_ The team is highly effective.
- 9 \_\_\_\_\_ The team delivers on its required production goals on time.
- 10 \_\_\_\_\_ The quality of the team's output is very high.
- 11 \_\_\_\_\_ The team faces problems related to safety effectively.
- 12 \_\_\_\_\_ The team works to keep themselves safe.
- 13 \_\_\_\_\_ The team does a good job keeping the number of scrap parts down.
- 14 \_\_\_\_\_ The team proactively communicates its performance.
- 15 \_\_\_\_\_ The team makes valuable contributions to the company.
- 16 \_\_\_\_\_ The team does very good work.
- 17 \_\_\_\_\_ The team provides a volume of work consistent with established production standards.
- 18 \_\_\_\_\_ The team performs duties accurately and consistently.
- 19 \_\_\_\_\_ The team actively looks for ways to keep their area safe.
- 20 \_\_\_\_\_ The team works to ensure that the number of scrap parts is at a minimum.
- 21 \_\_\_\_\_ The team keeps everyone informed.
- 22 \_\_\_\_\_ The contributions of this team are very valuable to the company.
- 23 \_\_\_\_\_ The team does a very good job.
- 24 \_\_\_\_\_ The team is highly effective at implementing solutions to problems on the line.

## VITA

Nicole Wild was born in Baton Rouge, Louisiana to the parents of W. James and Jill Wild. She is the first of two children, a younger brother named James. She attended Parkview Baptist School for elementary school, Lake Sherwood School for middle school, and The Runnels School for high school (all in Baton Rouge). After graduation, Nicole attended Louisiana State University where she completed her Bachelor of Science in Psychology with a minor in Business Administration in December 2012. Nicole was accepted into the Industrial-Organizational Psychology Master's Program at The University of Tennessee at Chattanooga in spring of 2013 and began her studies that next Fall. Nicole will graduate with a Master of Science degree in Psychology with a concentration in Industrial-Organizational Psychology in May 2015. She will begin her career in the Human Resources Leadership Program at GE Power and Water after that.