# THE DIFFERENTIAL EFFECTS OF MYERS-BRIGGS PERSONALITY TYPE PREFERENCES ON SELF- AND OTHER–RATERS OF TRANSFORMATIONAL LEADERSHIP

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The Differential Effects of Myers Briggs Personality Type Preferences on Self- and Other-Raters of Transformational Leadership.

#### Jonathan Charles McClean

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This study examines the differential effects of Myers-Briggs Personality Type Preferences on self-awareness operationalized as the difference between self- and otherraters of Transformational Leadership. The study is based on a population of Leaders (n= 164) and Raters (n = 1461) from a United States-based industrial manufacturer. The study is cross-sectional, and uses quantitative archival data that was collected in 2018 via an online survey using the MLQ 5X and Myers-Briggs Type Indicator as measurement instruments. These are both well established and validated instruments. The data were analyzed using Excel Analysis ToolPak to compare Leader self-ratings with the average of observer Ratings across the five scales of Transformational Leadership: Idealized Influence – Attributed, Idealized Influence - Behavior, Inspirational Motivation, Intellectual Stimulation and Individual Consideration. The study analyzed differences between Leader and Rater MLQ scores across the four dichotomous type preferences and four cognitive pairs operationalized by Leaders' self-ratings of MBTI. The results revealed select differences between Leaders' and Raters' ratings of Transformational Leadership, regardless of the Leaders' MBTI preference. Data analysis found partial support for Hypotheses 1 and 3, comparing Leaders' and Raters' scores based on differences in MBTI personality preferences. Except for Extroversion, there were few statistically significant differences between leader and raters analyzed by single personality preferences, however the effect of Extraversion extended when this

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personality preference was combined with other MBTI preferences, such as E & T. Only the functional pair ST reflected no significant difference from the other functional pairs and so demonstrated the greatest similarity between self- and other ratings of Transformational Leadership, which could suggest greater self-awareness. No support was found for Hypothesis 2 based on the finding of no significant differences in selfawareness for leaders with Myers-Briggs cognitive style preferences ST and SF, where self-awareness was operationalized as the difference between self and other ratings of transformational leadership on each of the subscales of the MLQ 5X. The only significant effect for self-awareness was localized to SF leaders compared to NT leaders on the intellectual stimulation subscale of transformational leadership. Support was found for Hypothesis 4. There was a significant overall interaction effect between Leader and Rater scores of transformational leadership, when personality was not considered. This interaction effect was largely due to Leaders' higher ratings of Idealized Influence -Attributed, compared to followers' ratings on the same transformational leadership subscale. These finding could lead to further research to better understand what aspects of personality may differentially affect how leaders and followers assess transformational leadership.

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#### **CHAPTER 1. OVERVIEW OF THE STUDY**

#### **Research Topic and Background**

For at least a century, contemporary scholars have been investigating leadership, to discover amongst a myriad of facets how leadership relates to leaders' behavior and to their personality (Smith and Canger, 2004). The broader field of study is of course much older; the words for leader "sehemu" and leadership "seshement" have been found in Egyptian hieroglyphics that are over 5000 years old (Bagheri, Sohrabi & Moradi, 2015).

Stogdill's (1974) early work originally pursued a trait approach to studying great leaders in his examination of leadership, however it was the personalities of leaders, rather than their other traits, that increasingly stimulated scholarly interest following work carried out by Bass (1985), who extended the earlier work of Burns (1978) by explaining the psychological mechanisms that underlie transactional and transforming leadership. Bass (1985) replaced the term transforming with transformational, and explained how transformational leadership could be measured. Little consensus has emerged generally on the traits of successful leaders, or more specifically the extent to which leadership is predicated on personality (Smith and Canger, 2004). Nevertheless, the study of personality and how it impacts leader effectiveness has continued and been extended by Hautala (2005, 2007) and Brandt & Laiho (2013). These more recent studies form the basis for this research proposal.

The Myers-Briggs Type Indicator (MBTI) is one measure of personality preference that has been studied among leaders as it offers advantage over other more rigid approaches such as the five-factor model (FFM). These methods have been criticized because of their permanent trait approach (Walck, 1997), and lack of theoretical

underpinning (Eysenck, 1992). Proponents of the MBTI argue it is a dynamic and positive assessment of relatively stable personality preferences, based on a foundation of Jungian theory (Walck, 1997). Because of its ease of administration, and intuitive interpretation, this instrument has become a common method of self-assessment in the context of leadership development initiatives and providing a ready source of data for studying how personality relates to leadership (Galen, 2006).

Effective leadership is critical across all types of enterprise. Yet, the study of leadership is made more difficult because there is no agreed upon single definition of leadership (Kezar, 2006). Consequentially, neither is there an established method of determining leaders' effectiveness (Hogan, Curphy & Hogan, 1994). This is due in part to the fragmented (Kezar, 2006) and narrow (Nysted, 1997) focus of much of the empirical research on leadership, as well as the multitude of broad, nuanced and subtle contexts in which leadership occurs. Among the many leadership theories formulated by scholars, Yukl (1998) describes leadership that is transformational as a *sine-qua-non*, without which an organization's survival in times of turbulence and rapid change would be almost unthinkable.

Transformational Leadership theory emerged from Burns' (1978) classic work entitled Leadership which was based on the premise that transforming leadership raises both the leaders' and the subordinates' level of motivation and morale. Burns (1978) asserted transforming leaders would engender higher levels of motivation among followers than transactional leaders who rely primarily upon rewards and punishments to motivate subordinates. The outcomes of transformational leadership were subsequently operationalized relative to a leader's effect on their followers' respect (Bass, 1985), trust

and admiration (Avolio, 1999) for their leaders, and their motivation to do more than they were originally expected to do (Yukl, 1998). The concept of transforming leadership that Burns described became the basis for Bass's (1985) theory of Transformational Leadership. Bass & Avolio (1995) subsequently operationalized the four behavioral components of transformational leadership theory as: idealized influence, individualized consideration, intellectual stimulation and inspirational motivation (Bass & Avolio, 1999)

Idealized Influence (charisma) arouses strong emotions from followers which leads to identification with (Bass & Avolio, 2001), and emulation of the leader (Yukl, 1998). This is because transformational leaders act as strong role models for their followers (Avolio, 1994; Yukl, 1998). Transformational leaders also display high moral standards and conduct themselves in an ethical manner, so they can be counted on to do the right thing. (Bass & Avolio, 1994).Idealized influence was further distinguished into attributed Idealized Influence (II-A) and behavioral Idealized Influence (II-B) by Bass & Avolio (1995). Idealized Influence- Attributed (II-A) refers to the follower perceptions of the characteristics attributed to a leader. II-A describes a leader who is an exemplary role model and is admired by their followers (Bass & Avolio, 1995). Idealized Influence-Behaviors (II-B) refers to follower perceptions of leaders' observable behavior. According to Bass & Avolio (1995), IIB describes a leader who can be trusted and has high moral and ethical standards.

Individualized consideration involves providing support (Avolio, 1994), encouragement (Bass, 1998) and coaching (Yukl, 1998). Bass & Avolio (1992) also found that it involves feedback and advice on the personal development of followers.

Intellectual stimulation increases awareness of the problem, and Yukl (1998)

found it allows followers to view the problem from a new perspective. Followers are stimulated to be creative and innovative (Bass & Avolio, 2001) and also to take intellectual risks and question assumptions (Bass & Avolio, 2001).

Inspirational Motivation includes developing and communicating an appealing vision (Avolio, 1994), using symbols and images (Bass & Avolio, 2001) to focus the efforts of subordinates, and modelling behaviors that are deemed appropriate (Yukl, 1998).

This study examines the differential effects of Jungian personality preferences on self-awareness operationalized as the difference between self- and other-ratings of transformational leadership behaviors. Atwater & Yammarino (1992) argue that "self-awareness stems from the individual's ability to assess others' evaluations of the self and to incorporate those assessments into one's self-evaluation" (p143). Duval & Wicklund (1972) found that self-awareness includes reflection on thoughts, drives, needs and intuitive reactions; and developed a theory of objective self-awareness (OSA). According to the original OSA theory, individuals periodically focus attention inward and begin a comparison process to compare themselves to a standard, expectation or goal. The OSA theory continues to predict that the likely outcome of such comparison would be identification of a self / standard gap. Boyatzis (2011) found that self-awareness "concerns knowing one's internal states, preferences, resources and intuitions" (p.9).

A number of researchers have focused more on self-awareness outcomes than nuances in self-awareness conceptualizations. Van Velsor, Taylor & Leslie (1993) defined self-awareness simply as self /other agreement. Those leaders whose selfreported ratings of performance are similar to performance ratings ascribed to them by

others are defined operationally has having high levels of self-awareness. Using this operational standard, a body of empirical research has developed suggesting that leaders with high levels of self-awareness tend to have better performance outcomes than those with lower levels of self-awareness (Atwater, Yammarino, Ostroff & Fleenor 1998; Bass & Yammarino 1991). Atwater and Yammarino (1992) also showed that there is a connection between high self-awareness and improved operational outcomes. These previous findings provide a foundation for the proposed study exploring the differential effects of personality on self-awareness operationalized as the difference between self-and other-ratings of transformational leadership behaviors.

#### **Statement of Problem**

While evidence of a relationship between transformational leadership and personality is comparatively recent (King, 2017; Brant, 2006, 2013; Hautala 2006), results of these studies have been inconclusive. This is due in part to inconsistencies in operationalizing transformational leadership. While there are fewer studies addressing the relationship between self-awareness and leadership effectiveness, results have been more consistent (Bass and Yammarino 1991; Atwater and Yammarino 1992). Yet there is little published literature or empirical research exploring whether personality preferences predict differences in self- and other-ratings of transformational leadership. This study addresses this gap in scholarship by examining the differential effects of Myers-Brigg's personality preferences on differences in self- and other-ratings of transformational leadership behaviors.

#### **Purpose of the Study**

The purpose of this study was to examine differences in self-and other-ratings of

transformational leadership, as an indicator of self-awareness, based on differences in leaders' Myers-Briggs personality type preferences in a mid-western US Industrial business.

The relationship between Myers-Briggs personality type preferences of leaders and their perceived transformational practices was examined using multi-rater360-degree feedback as measured by the Multifactor Leadership Questionnaire (MLQ 5X), comparing differences in self- and other-ratings of Transformational Leadership as an indicator of leaders' self-awareness. This exploratory analysis examined whether some personality type preferences are associated with greater similarity in self- and otherratings of their transformational leadership practices, as a potential indicator of heightened self-awareness.

#### **Theoretical Framework**

In this study, the independent variables were the eight Jungian personality type preferences operationalized by the MBTI: Introversion (I) vs Extraversion (E), Sensing (S) vs Intuition (N), Thinking (T) vs Feeling (F) and Judging (J) vs Perceiving (P), and the four functional pairs (ST, NT, SF, NF). These personality preferences describe how individuals characteristically deal with their environment. The functional pairs address an individual's approach to life, based on a combination of: 1) the types of information primarily attended to (sensing or intuition), and 2) the how decisions are typically made (thinking or feeling).

The dependent variables in this study were the four behavioral dimensions of transformational leadership theory: Idealized Influence (separately operationalized as Attributed (II-A) and Behavioral (II-B)), Inspirational Motivation (IM), Intellectual

Stimulation (IS) and Individual Consideration (IC). The four transformational leadership behavioral dimensions are conceptually and factorially independent of each other, although they are highly correlated in practice (Bass & Avolio, 1993).

For purposes of assessing the differential effect of personality on ratings of leadership behaviors, self-awareness will be defined in this study as the different between self- and other-agreement on ratings of the four behavioral dimensions of transformational leadership. Self-awareness has been so defined and operationalized n this way by a number of scholars (Velsor, Taylor & Leslie, 1993, Wohlers & London, 1989). Given that self-awareness is an inwardly-focused evaluative process in which individuals make self-comparisons against an internalized standard with the goal of better self-knowledge and improvement, Duval and Wicklund (1972) argued that individuals often view themselves as both observers and subjects of observation. This matters, because self-awareness enables individuals to better adjust to their environment, and so anticipate the needs of their followers, and what will matter to, and resonate with, others.

The differential effects of Myers-Briggs personality preferences on leader selfawareness operationalized as differences between self- and other-ratings of transformational leadership assessed in this study are illustrated in Figure 1.

#### **Research Questions**

The research examined the differential effects of Jungian personality type preferences and functional pairs on differences in self- and other-ratings of transformational leadership practices among a population of leaders in a United Statesbased industrial business.



Figure 1. Hypothesized differential effects of Myers-Briggs Personality Preferences on Transformational Leadership

The following research questions and hypotheses guided the study:

Overarching Research Question: What is the differential effect of Jungian personality preferences on self-awareness operationalized as the difference between self- and other-ratings of transformational leadership behaviors?

H1a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type preferences of Extraversion and Thinking

H1b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type preference of Sensing and Perceiving.

H2a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences NF and NT

H2b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences ST and SF.

H3a. There will be significantly more transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Introversion and Perceiving.

H3b. There will be significantly less transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Extraversion and Judging.

H4a. There will be a significant interaction effect between self vs. other perceptions of leadership behaviors on all four dimensions of transformational leadership: Idealized Influence (II-A, II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC).

#### Methodology

This cross-sectional study examines data collected from a population of leaders and subordinates who are participants in an ongoing Leadership Development program (LDP) in a U.S.-based industrial manufacturer. Participants in the leadership development program are employees of the organization currently in leadership positions. As part of the leadership development program, these employees complete both a selfreport instrument assessing Myers-Briggs personality type preferences (MBTI Form M), and the self-version of the MLQ 5X, a standardized assessment of transformational leadership behaviors. Subordinates of the leadership development program participants simultaneously complete the rater version of the MLQ 5X, providing an average otherrater score for each leader on each of the four dimensions of transformational leadership. De-identified archival data from 2018 participants in the leadership development program will be analyzed for this study.

Results of the Myers-Briggs were used to identify leaders' personality type preferences along five dichotomous variables, and four functional pair preferences. Type preference and functional pairs are both categorical variables. Results of the MLQ 5X were analyzed to determine both leaders' self-scores and their average other-rater scores on each of the four dimensions of transformational leadership, these being continuous variables.

Data analysis assessed differences in mean MLQ 5X scores among leaders based on their personality type preferences. Comparison between self-report and rater scores on the MLQ 5X were examined for each of the dichotomous type preference pairs and combined cognitive (functional) pairs defined by the Myers-Briggs Personality Type Indicator. The data used for this study were archival, originally collected from a crosssectional population comprised of approximately 164 leaders and 1461 of their subordinates. Participant solicitation and administration of the assessment instruments were carried out by an external consultancy contractor that has successfully worked for the company and with this population for several years. The contractor is a multidisciplinary global consulting group with 25 years of experience in the administration of a broad suite of measurement tools and analysis by MBTI Foundation Master Credentialed practitioners. The data were provided to the researchers for this study anonymized, and with all identifying information stripped out. No key codes that would permit data to be linked to individual participants were provided to the researchers.

The operationalization of personality in the proposed study was based on Jungian psychological type, which is sometimes referred to as cognitive style, decision making style or problem solving style, and has been used to understand individuals as leaders (Fitzgerald & Kirby, 1997). The personality type preferences of participants will be assessed using the Myers-Briggs Type Inventory (MBTI), which has operationalized the Jungian construct of type so that it can be reliably identified, quantified, and compared to the other measures of leadership (Fitzgerald & Kirby, 1997). The self-scoreable form M of the MBTI was used to determine the four letter personality type of the leaders. This form consists of 93 items and was administered and scored by a third party MBTI Certified Practitioner, and the data were provided anonymized and without any means to link back to the individual completing the profile.

Transformational leadership behavior was operationalized in this study using the Multifactor Leadership Questionnaire (MLQ 5X) Self and Rater Form. This is a well validated, standard tool developed to assess transformational and transactional leadership (Bass & Avolio 2004). The MLQ 5X Suite has been used in a wide variety of organizations for both research and leadership development purposes. The MLQ 5X Questionnaire further divided Idealized Influence into two parts: Idealized Influence – Attributed and Idealized Influence -Behaviors. Idealized Influence – Attributed (II-A) examines trust and respect, whilst Idealized Influence-Behaviors (II-B) addresses the demonstration of high moral standards, values, beliefs and principles. Antonakis (2003) provided strong evidence to support the validity and reliability of the MLQ 5X, using two large samples (Study 1: N = 3368, Study 2: N = 6525). While the MLQ 5X also assesses dimensions of transactional and passive/avoidant leadership as well as leadership

outcomes, only data from items pertaining to transformational leadership behaviors were included in the analysis undertaken for this study.

#### **Definition of Terminology**

Leader – in this study employees who have direct reports qualify as leaders, and will occupy positions in the target organization holding the following titles: Vice Presidents, Directors, Managers and Team Leaders.

*Transformational Leadership* – Bass (1985) defined transformational leadership in terms of how the leader effects their followers, who are intended to trust, admire and respect the transformational leader. He identified three ways that such leaders transform followers: increasing their awareness of task importance and value, focusing on team or organizational goal over their own interests, and activating their higher-order needs. Burns (1978) also noted that great leaders do more than satisfy their followers' wants in exchange for support; they win allegiance by sensing and articulating followers' deeper needs.

Multifactor Leadership Questionnaire (MLQ 5X) – The Multifactor Leadership

Questionnaire (MLQ 5X) is a standardize tool used to measure the continuum of transactional and transformational leadership behaviors exhibited by leaders in organizations (Bass & Avolio 2004). The research instrument comprises 45 descriptive statements rated on a 5 point-Likert type scale, reflecting frequency, with the following response options: "not at all", "once in a while", "sometimes", "fairly often", and "frequently if not always". The score for each item varies from 0 (not at all) to 4 (frequently if not always). Both the Self and Rater versions of the MLQ 5X questionnaire will be used. The leadership styles which are studied

are Idealized Influence - Attributed (IIA), Idealized Influence – Behaviors (IIB) Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individualized Consideration (IC). For purposes of this study, data pertaining to transactional leadership and passive / avoidant leadership (i.e. Contingent Reward, Management-by-Exception and Laissez-Faire) will not be included in the analysis.

- Myers-Briggs Type Indicator (MBTI) The MBTI operationalizes Jungian personality theory, assessing individual preferences pertaining to information processing, decision styles and lifestyle preferences. The instrument is in the form of a questionnaire, and the items are arranged in a forced choice format that measures personality through four scales on opposing dichotomous poles.
- Myers-Briggs Personality Type personality type assumes that there are qualitatively different personality preferences among people and therefore leaders. According to type theory, people vary along four bipolar dimensions, which include Extraversion (E) Introversion (I), Sensing (S)-Intuition (N), Thinking (T) Feeling (F) and Judging (J)-Perceiving (P). (Myers, 1998). The combination of these preferences define personality types within Jungian personality theory.
- *Extraversion* (*E*) individuals with a Myers-Briggs preference for extraversion direct energy toward, and get motivation from the outer world of people and objects.
  (Myers, 1998). They seek high interaction with their leaders (Philips and Bedeian, 1994) and Hautala (2007) observed that they often seek a connection at a friendship level with their leaders.

- *Introversion (I)* individuals with a preference for introversion direct energy toward the inner world of experiences and ideas, losing energy when around many people.
  (Myers, 1998). They prefer to have more intellectual stimulation from their leaders (Brandt et al. 2013)
- Sensing (S) individuals with a preference for sensing focus and gathering information thru their senses in a precise and detailed fashion. (Myers, 1998)
- *Intuition (I)* individuals with a preference for intuition examine the big picture and focus on joining the dots (Myers, 1998)
- *Thinking* (T) individuals with a preference for thinking look for objectivity, are detached and base conclusions on logical analysis. (Myers, 1998)
- Feeling (F) individuals with a preference for feeling base perceptions on personal or social values, and consider what is important to them and others in a decision making scenario. They tend to be better than thinkers at considering the perspectives of others. (Myers, 1998)
- Judging (J) individuals with a preference for judging means they want things settled and ordered, often completing tasks ahead of deadlines, however can be quick to draw conclusions (Myers, 1998)
- Perceiving (P) individuals with a preference for perceiving prefer to live in a flexible, unstructured way. They seek to experience and understand life, rather than be controlled by it (Myers, 1998). They behave in a more individualistic, assertive style and adventurous style than those that prefer judging, and they also go against the stream more than judging types (Routamaa & Pehkonen, 1999).

Self-awareness – the ability to see and assess one's behavior as it is perceived and assessed by others (Roush & Atwater, 1992), and includes awareness of and reflection on the physiological responses, emotions, thoughts, drives, needs or intuitive reactions (Duval & Wicklund, 1972)

Self-awareness accuracy – has been defined by a number of researcher as self/other agreement, i.e. leaders whose self-reporting rating of performance are similar to performance ratings ascribed to them by others are defined as having high selfawareness (Van Velsor et al. 1993) Self-awareness will be operationalized in this study as self / other agreement.

#### Assumptions

There is an underlying assumption participants responded honestly to the assessment instruments administered, given they were participating in an employee-sponsored leadership development program.

The sample is assumed to be representative of leadership behaviors within the target organization, and those who observe the leaders are also assumed to be observing typical leadership behaviors. Rater anonymity is critical and is stressed several times during the instrument deployment phase. Rater feedback to their leaders will be provided in aggregate.

#### **Limitations of Study**

This study will not examine differences based on gender differences, age, or length of service on any dimensions of personality types, transformational leadership, or self-awareness. The data for this study was collected from a single population of employees at a U.S. based manufacturing business from a survey in 2018. The results

might therefore not generalize to other organizations or contexts such as education, healthcare or other fields or practice.

Self-perception bias may need to be considered as the MBTI is a self-reporting instrument, and as the leaders can verify their type according to Myers-Briggs procedures, there might be self-perception bias in the type choices. Fitzgerald (1997) found that the environment of an organization, or indeed the dominant type of an organization can interfere with the natural inclination and preferred processes of an individual. Walck (1997) observed that managers of all types value the organizational culture, and modify their behaviors and preferences accordingly.

#### **Delimitations**

The population being studied consists of mid-level managers and their followers at a U.S.-based industrial manufacturer. The data for this study was collected in early 2018 before the annual leadership summit for managers in the target organization, as part of an on-going multiyear leadership development project. The population being studied attended the summit in person, however the questionnaires were administered on-line in advance, in preparation for the summit. Similar 360 degree-feedback type studies have been successfully administered to employees in the target organization in previous years by the same organization that will be used to gather data for this study. The results of the original questionnaire were not published at the leadership summit; the data was used internally by the Human Resource Group. Because the data was not widely published, participants completing the questionnaire in multiple years would be less able to curate their answers to improve their score.

The study will not examine the personality preferences of those providing the multi-rater feedback, as this exceed the scope of the study, and the data is being collected through a secure and familiar online survey instrument. Anonymity of the raters to their leaders is protected so that raters would feel able to provide feedback without fear of retaliation or retribution, thereby enhancing the value of the feedback data.

#### Significance of Study

The study of leadership and personality has a long and controversial history (Nystedt, 1997). The results of many decades of research attempting to determine the relationship between personality preferences and leadership behaviors have been inconsistent and disappointing (Judge, Bono, Ilies & Gerhards, 2002), however progress has been made recently by Brandt (2016) who determined using the Kouzes and Posner 's (2007) Leadership model as measured by their Leadership Practices Inventory (LPI) instrument that ratings of leaders and subordinates regarding leaders' transformational leadership behavior are not parallel, and that leaders' self-ratings indicated that perceiving, extraversion and intuition to be the most transformational, while subordinates appraisals indicated that sensing preferences lead to more transformational behavior being observed. Brandt (2106) used the Leadership Practices Inventory (Kouzes & Posner, 1988) for their study as a version in the Finnish language was available.

This study is designed to contribute to these ongoing efforts to better understand the relationship between personality and transformational leadership. Utilizing two widely used instruments employed to raise self-awareness in leadership development; the Myers-Briggs Type Inventory (MBTI) and the Multifactor Leadership Questionnaire (MLQ 5X) among a sample of US based industrial leaders and their subordinates.

Utilizing both the self- and other- rater versions of the MLQ instrument in this study, provides an opportunity to examine the moderating effect of self-awareness on the relationship between personality and transformational leadership in this study.

Van Velsor, Taylor & Leslie (1993) defined self-awareness as self / other agreement; leaders whose self-reporting ratings of performance are similar to performance ratings ascribed to them by others observing their behavior are defined as having high self-awareness. Atwater, Ostroff, Yammarino & Fleenor (1998), used this operational standard to determine that highly self-aware leaders tend to have better performance outcomes than less self-aware leaders. This study will build on earlier work by Bass & Yammarino (1991), Furnham & Stringfield (1994) and Wohlers & London (1989) whose studies previously operationalized self-awareness as self/other agreement. Atwater and Yammarino (1992) then argued that the self-aware individual would have a more accurate self-assessment because "self-awareness stems from the individual's ability to assess others' evaluations of the self and to incorporate those assessments into one's self-evaluation" (pg. 143). In this way, the proposed study builds on previous research assessing leader's self-perception accuracy, to potentially offer new insights into the role of self-awareness in moderating the relationship between personality type preference and transformational leadership.

#### **Organization of Study.**

This research proposal is presented in three chapters. Chapter I includes the background of the study, statement of the problem, purpose of the study, theoretical framework, research questions, methodology, definitions, assumptions, limitations, delimitations and the significance of the study. Chapter II presents a review of seminal

works identified in the published literature on Transformational Leadership, Myers-Briggs theory of personality and the Myers-Briggs Type Inventory (MBTI), selfawareness, how the MBTI and Transformational Leadership are related, how MBTI and self-awareness are related and interact, and how self-awareness and Transformational Leadership are related. Chapter III describes the methodology proposed for conducting this study. It describes the selection of participants, procedures for protecting the human subjects, obtaining informed consent, ensuring data integrity, participant confidentiality, instrumentation, data collection and data analysis procedures. Chapter IV presents the procedures and results of data analysis. Chapter V interprets results of the analysis in relation to stated research question, discusses implications of the findings of this study, and makes recommendations for future research.

#### **CHAPTER 2. REVIEW OF THE LITERATURE**

In order to provide a context for an examination of the relationship between transformational leadership, self-awareness and personality, this chapter presents a review of the related literature, which provides an underlying framework for understanding the concepts that are essential for this study: (a) an introduction to the problem, (b) Transformational Leadership theory, (c) Myers-Briggs Theory of personality and Myers-Briggs Type Indicator (d) Self-awareness, (e) MBTI and Transformational Leadership, (f) MBTI and Self-awareness and (g) Self-Awareness and Transformational Leadership.

#### Introduction

The need for effective leaders to transform organizations, attract capable employees and lead in the context of a volatile and uncertain global economy have probably never been stronger. Even though leadership theories abound, organizations require better, agile, stronger and more transformational leaders, who can clearly articulate a coherent vision of the future (Lemoine, 2014), enable followers to transcend self-interest for the greater collective purpose, and manage dispersed teams whilst delivering results in a changing and complex global environment (Euchner, 2013).

The requirement to define leadership, and set out how to deliver it effectively within such a complex setting is clear, but underserved (Kezar, 2006). Fitzgerald & Kirby (1997) observed that there is a lack of useful research in building and creating effective leader education, selection and development programs.

Although numerous researchers have examined the antecedents (Bester, Stander & van Zyl, 2015) and outcomes of leadership (Day, Gronn & Salas, 2004), there

remains little consensus on how leaders develop (Boyatzis & McKee, 2005), what makes a leader effective (Goleman, 1995), the various relationships between gender and transformational leadership, (Fitzgerald & Kirby, 1997), personality and transformational leadership, (Hautala, 2005, Brandt, 2016), and self-awareness and transformational leadership ( Smith and Canger, 2004).

Whilst the importance of transformational leadership behaviors has been well supported through research, the extent that these behaviors can be predicted by the leader's personality remains unclear (Fitzgerald & Kirby, 1997; Hautala, 2005; Smith and Canger, 2004, Brandt, 2016).

The gap between the leadership research and the practical implications of the research has been recognized; Bensimon, Neumann & Birnbaum (1989) concluded that research can really only provide a trivial and superficial response given the complexity and multifaceted nature of the topic.

Hogan & Kaiser (2005) observed that leadership is a socially constructed and collective phenomena, and their observation that effective leaders are defined thru the eyes of the led was confirmed by Kezar (2006). An individual's personal constructs, frames and assumptions impact their leader identity, how they enact their role, and how they interact with their followers (Kezar, 2006). Communication and relational skills are critical parts of transformational leadership theory, and these are critical competencies that effective leaders need to identify, refine and hone into well-developed skills (Kezar, 2006) to effect successful outcomes (Hogan & Kaiser, 2005).

Posner (2009) observed the lack of an inside out focus as a basic flaw in the way that leadership is taught. Leadership educators and development practitioners focus on

delivering messages and concepts that can be applied to leadership from the outside–in, rather than learning to be a leader from the inside-out.

Brown & Posner (2004) have observed the importance of conceptualizing "leader" as a social identity, as perceived by the self and others. So understanding one's self-identity, which significantly includes personality becomes a critical aspect of leadership development (Komives, Longebeam, Owen, Mainella & Osteen, 2006)

Our personality and personality preferences impact who we are, how we learn (Hogan & Kaiser, 2005), how we develop psychologically, why we behave as we do, how we lead and how we interact with others (Fitzgerald & Kirby, 1997). Leadership failure, according to Hogan & Kaiser (2005) is often the result of one or more personality disorders, or in some cases dysfunctional interpersonal dispositions that prevent leaders from completing the essential skills of team building and gaining trust.

Researchers have found inconsistent and disappointing linkages between personality traits and leadership behaviors. Judge, Bono, Iles & Gerhards, (2002), attributed this to the narrow and fragmented approach (Nystead, 1997) that had been adopted by much of the research, rather than a holistic and realistic approach to the study of leadership and personality.

#### **Transformational Leadership**

When Burns (1978) originally developed the theory of Transformational Leadership, he drew from his observations as well as the literature on leadership styles, traits, and leader-member exchange research. Burns considered the transformational leader to be distinct from the transactional leader, where the transactional leader is one who initiates contact with subordinates in an effort to exchange something of value, such

as rewards for performance or the release of useful information. The transformational leader is one who engages with others in such a way that the leader and follower raise one another to a higher level of morality and motivation. Higher aspirations of the collective group are expected to transcend the individual and the outcome is a marked improvement in unit performance.

Bass & Yammarino (1989) described transformational leadership as a power that is consensual and facilitative in nature – as a form of power manifested thru other people, not over other people. Transformational leadership is a process that involves shaping (Yukl, 1999), expressing and mediating conflict amongst groups of people in addition to motivating (Kammerhoff, Lauenstein and Schutz, 2019).

Bass (1985) integrated the transformational and transactional leadership style, recognizing that both styles can be linked to successful outcomes and the achievement of goals. Bass, Avolio and Goodheim (1988) however observed that transformational leadership style in the absence of any transactional relationship between the leader and follower to be unlikely to be successful. Transformational leadership is a common construct used in research (Burke, Granadox & Salas, 2011; Podsakoff, Mackenzie, Moorman & Fetter, 1990, Faupel & Suss, 2019, Clover, 1990; Deluga, 1992; Sparks & Shenk 2001, Breevaart & Zacher, 2019).

Often when leadership is defined as transformational, it relates less to skill or trait and more to the ability to influence. Tierney, Foster (1989) write that transformational leadership is expected to create a culture based on morals, and that it is not a trait, skill or science. (Naber, Moffett 2017).Persistence was observed by Porter (2015), Furman (2015) and Sayadi (2016) as key to successful transformational leadership.

Avolio & Bass (1988) and Holttum (2019) also found that transformational leaders seek new ways of working, seek opportunity in the face of adversity, prefer effective over efficient answers, and are less likely to support the status quo. They do not merely react to environmental circumstances, but attempt to shape, mold and create them. Tichy and Devanna (1990) and Morgan, Fletcher and Sarkar (2015) defined transformational leadership as being concerned with change, and starts by recognizing the need for revitalization, creating a new vision and then institutionalizing change.

Numerous studies have shown that transformational leadership results in higher job satisfaction, (Clover, 1990; Jenewem and Schmitz, 2008), lower employee turnover, (Deluga, 1992; Marshall et al., 1992) higher productivity, (Masi and Cooke, 2000; Medley and Larochelle, 1995)and improved motivation ( Sparks and Schenk, 2001, Arthur, Hardy, and Woodman, 2012).

Bass (1985) identified that transformational leaders achieve these outcomes by raising the level of intellectual awareness about the value and importance of the outcomes, by raising or expanding individual needs, and importantly by inducing a belief in transcending self-interest for the sake of the outcome. This conceptualization of the transformational leader extended House's (1977) idea of the charismatic leader by including individualized consideration, intellectual stimulation aspects, in addition to idealized influence and inspirational motivation.

Individualized Consideration. Yukl (1999) and Grossman & Sharf (2018) observed that offering professional leadership developmental opportunities to followers is associated with skill improvement and expression of self-efficacy, and Bass & Riggio (2006) also observed enhancement of commitment and task competency to be associated

with developmental leadership. Raffery & Griffin (2006), Faupel, & Suss (2019) and Alase (2017) observed that respecting followers as individuals promotes less negative reaction to organizational change.

Intellectual Stimulation. Bass (1998) observed that maintaining the status quo by discouraging creative thinking actively disempowers and demotivates staff, elevating stress. Podsakoff, Mackenzie, Moorman & Fetter (1990) and Arnold & Loughlin (2013) found that intellectual stimulation was increased by actively encouraging followers to challenge their own traditional ways of completing tasks by trying new things and empowering all contributors to find new solutions. Conger & Kanungo (1994) observed that consideration for the environment beyond the organization increased Intellectual Stimulation.

**Idealized Influence.** Seltzer (1989), Koveshnikov & Ehmrooth (2018) and Zineldin (2017) observed that having idealized influence reduces stress and burnout within an organization. A leader's model character includes an expression of self-determination (House, 1977), openness and honesty (Alimo-Metcalf & Alban-Metcalf, 2005; Miller, 2009; Ferrari 2017) as well as measured risk taking given an uncertain outcome ( Conger &Kanungo, 1994; Sashkin & Sashkin, 2003, Afsar, Masood, 2019).

Bass & Avolio (1990) reported that the emphasis of subordinates' beliefs by a leader elevates idealized influence. Yukl (1999), Sashkin & Sashkin (2003) and Breevaart & Zacher, (2019) observed that a leaders' ability to gain trust beyond followers' respect and pride for the company is also a feature of idealized influence, and examined using the Idealized Influence-Attributed (II-A) questions in the MLQ 5X. II-A refers to the follower perceptions of the characteristics attributed to a leader, and Idealized Influence-

Behavior (II-B) refers to follower perceptions of leaders' observable behavior, describing a leader who can be trusted and has high moral and ethical standards (Rowold, 2005).

**Inspirational Motivation.** One of the most important aspects of Transformational Leadership is the ability of the leader to establish a vision that offers followers meaning (Bass & Roggio, 2006) and enables them to challenge their individual organizational tasks (Nye 2014). Expressing optimism (Alimo-Metcalf & Alban-Metcalf, 2005), preparing followers for change, being enthusiastic (Avolio & Bass, 2004) , and having confidence in reaching a vision are all necessary elements of promoting a vision and attaining the desired goals ( Carton & Lucas, 2018). Most successful visions are clearly articulated (Kotter & Heskett, 1992), credible and strategically planned (Hackman, 1986) this in turn drives common purpose, raising self-esteem in followers (Raelin, 1989) and enabling them to enthusiastically participate in the endeavor (Ashford, Wellman, de Luque, de Stobbelier, & Wollan, 2018).

Transformational leadership involves organizational members in the process of development (Keskes, Sallan, Simo, & Fernandez, 2018) and pursuing a shared vision , which Tichy & Devanna (1986) observe are more successful, but result in fewer employee intentions of leaving the organization (Vancouver & Schmitt, 1991; Bass 1990) , more leader commitment (King & Anderson, 1990; Chan & Mak 2014) and enhanced group performance ( Barling, Louglin & Kelloway, 2002). Active modeling of the values that underlie the mission was observed by Bennis & Nanus (1985) to complete followers to embrace the mission, and Yukl (2002) and Gumusluoglu & Ilsev (2009) observed that leaders who can build support for the organizational goals from outside the business both show their own commitment and compel the followers to embrace the mission.
# **Myers Briggs**

The Myers-Briggs theory of personality was based on Jung's (1921) seminal work on psychological type. The Myers-Briggs theory, and the Myers-Briggs Type Indicator (MBTI) were developed by Katharine Cook Briggs and Isabel Briggs Myers, and have as their basis Jung's work.

Carl Jung developed three dimensions to explore an individual's psychological type; orientation of energy, process of perception and process of judging. Myers and Briggs added the fourth dimension of the individual's preference for a lifestyle, or attitude of dealing with the outside world.

The Myers Briggs Type Indicator includes eight different preferences, which describe a person's source of energy (Extraversion (E), Introversion (I)), the way an individual gathers information (Sensing (S), Intuition (N)), the way people prefer to make decisions (Thinking (T), Feeling (F)), and the way people live their lives (Judging (J), Perceiving (P)). In each dimension, according to Jung, a person has one preference that is stronger than the other, with the stronger preference emerging as the personality type.

The four dichotomies (E-I, S-N, T-F and J-P) are then categorized by the MTBI instrument into one of 16 personality types, where each type is a combination of the four dichotomies, e.g. ENTJ. The personality types are more than a simple combination of preferences however, even if most MBTI research focuses on preference rather than type (Walck, 1997, as cited in Brandt, 2006). The dominance order of personality types adds further understanding to type theory, and explains the wide adoption of MBTI in research and the development of leaders (Myers & Myers, 1990; Fitzgerald & Kirby 1997).

Quenk (2002) observed that individuals habitually favor one pair of opposites over the other, which results in a preference, and that a combination of preferences for these functions constitute type.

**Extraversion and Introversion.** The primary question to answer in determining if an individual prefers Extraversion over Introversion is "Where do you focus your attention?" and "Where do you get your energy?" (Myers, 1998). People that prefer Extraversion receive their energy from the outer world of activity and people. They are more likely to prefer action over self-reflection and often like to talk over issues to understand them. Extraverts enjoy people contact and can be viewed as energetic. Myers (1998) observed that they can have broad interests, sociable, readily take the initiative in both the work and social context. Gardner & Martinko (1996) viewed the E vs I orientation as being relevant to managerial behavior and focused on by the psychology and counselling literature, but " virtually ignored" by Management researchers.

People that prefer Introversion direct and receive their energy from their inner world of thoughts and ideas (Myers, 1998). Their preference is reflection over action, and rather than discuss issues prefer to think matters thru. Introverts prefer to communicate in writing, and learn most effectively by reflection. Myers (1998) observed Introverts as private and contained, and will typically only take action or seize the initiative when an issue is important to them. Introverts will lose energy when around a lot of people, and often chose to spend more time alone than the extrovert.

Brandt, Edinger & Kultalahti (2013) used Myers-Briggs to determine if different personality types expect different types of leadership. They studied a population of 137 economics students and found statistically meaningful results for the preference pairs of

introversion-extraversion, sensing-intuition and thinking-feeling. They found that focused, introverted followers would like to have more intellectual stimulation from their leaders than the more social, extraverted followers: "It may be that deeper introverts would like to think of their work at a more profound level than extraverted people" (Brandt et al., 2013). Philips and Bedeian (1994) also determined that extraverted people will look for high interaction with their leaders, and Hautala (2007) determined that extraverted followers seek connection at a friendship level with their leaders.

Sensing and Intuition. The primary question in determining whether an individual prefers Sensing to Intuition is "How do you prefer to take in information?" (Myers, 1998). Sensing (S) individuals prefer to gather information thru their senses, in a precise and detailed fashion. Predictability is valued, so S types will often favor the tried and tested method. They trust their experience and work methodically, often in a step-bystep fashion towards a conclusion. They can often focus on small details (Myers, 1998). Gardner & Martinko (1996) found inconsistent relationships between managerial effectiveness and position on the S-N scale, which they felt was explainable by external moderating variables such as organizational level and the task requirements of the leaders position.

Those individuals that prefer Intuition (N) examine the big picture and focus on joining the dots (Myers, 1998). This group desires change, they enjoy hearing overall or general concepts first, and can quickly focus on the future possibilities. They are imaginative, verbally creative, move quickly to conclusion, follow their instinct and trust their inspiration. (Myers, 1998). Berr et al. (2000), Myers et al. (1998) both found that intuitive types to be more positive in their own appraisals , which Berr et al. (2000)

attributed to the individuals positive self-image from school, and also the views of their own supervisors. Roush & Atwater (1992) found that intuitive types received low ratings from subordinates, and posited because the experiment was conducted in a regimented military setting, where there is a lot of routine that intuitive types dislike.

**Thinking and Feeling**. The primary question to address whether an individual prefers Thinking or Feeling is "How do you make decisions?" (Myers, 1998). Individuals that prefer to make decisions thru their Thinking (T) function look for objectivity and truisms when making decisions, and typically examine the logical outcomes of their course of action. These individuals can be data driven, preferring logical outcomes and objectivity. They receive information from critiquing and analyzing information to determine what needs to be changed. (Myers, 1998). Their goal is to find a standard or principle that can be applied to other similar situations. (Myers, 1998).

Individuals with a preference for Feeling (F) in decision making consider what is important to them and others involved in the decision making scenario. (Myers, 1998). It is important to these types to honor people, and this type of individual is energized by appreciating and supporting others. Being guided by their personal values, Feelers prefer to create individual and interpersonal harmony when making decisions. (Myers, 1998). They prefer issues to be personal, can appear "tender-hearted" and have a strong interest in people, and are better than Thinkers at taking other peoples' perspectives and feelings into account (Myers, 1998).

Hautala (2007) observed differences between thinking and feeling types; thinking types are more independent than feeling types, and so "would like to have a more Laissez-Faire leadership style than the more soft and harmony appreciating feeling types"

Brandt et al. (2013). Berr, Church and Waclawski (2000) found that feeling senior managers were regarded as better at giving feedback and recognition according to both to peers and subordinates than thinking senior managers.

Judging and Perceiving. The primary question to ask to determine whether an individual prefers Judging or Perceiving is "How do you deal with the outer world" (Myers, 1998). Individuals with a preference for Judging feel most comfortable living in a structured, planned and ordered way, so that they can regulate their lives (Myers, 1998). A preference for Judging means an individual is more likely to want things settled and ordered; they complete tasks ahead of the deadline, seek goals and defined tasks, and can be quick to draw conclusions. They draw energy from achievement, and the closure this brings is important to Judgers (Myers, 1998).

Individuals with a preference for Perceiving (P) prefer to live in a flexible, unstructured way. They seek to experience and understand life, rather than to be controlled by it (Myers, 1998). These individuals will feel confined by detailed plans and routine, and will seek spontaneous, open routines. They are energized by their resourcefulness in adapting to the demands of the moment, and will seldom finish tasks ahead of a deadline, often appearing to go with the flow (Myers, 1998).

According to Routamaa & Pehkonen's (1999) study which studied managers' lifestyle, perceiving managers behave in a more individualistic, assertive, and adventurous way than judging types, and they also go against the stream more than judging types.

Because we use our preferences as a reflex action, a pattern develops over time of personality type (Myers, 1998). This is caused by the interaction of the four types that

comprise the sixteen different personality profiles. An individual's attitudes, behaviors and skills are associated with their type, and those with different types will be different in several ways (Myers, 1998).

Even though we have a preference for one of the two opposites on each of the four dichotomies, we can use both poles at different times, but not with the same ease or confidence (Myers, 1998). Because of this choice, the non-preference is used less, and so is less developed, more un-natural, and indeed less trusted (Martin, 1997). So when we use our preferred choice we feel more competent, natural and energized (Myers, 1998).

Martin (1997) found that when individuals are engaged in behaviors that call on their non-preferences, they feel uncomfortable, unnatural, less competent and less confident. Inevitably in a work situation, for example an individual with an introverted preference that is required to address a large audience, an individual with a preference for perceiving that works in a large, structured and routine driven environment, or an intuitive in a military setting, each of these types of individuals might be required to use their less preferred function, which can impact perceived effectiveness by both followers and self.

Martin (1997) observed that whilst all individuals have Jung's four mental functions (Sensing, Intuition, Thinking and Feeling), people differ in the order that they prefer to use them, and also in the order in which they develop and grow. Myers (1998) noted that whilst two people prefer might intuition or feeling, they will differ in how they demonstrate the function based on its dominance. Quenk (2002) observed that Jung's four functions provide all that the human psyche requires to grow, change, heal and balance.

Fitzgerald and Kirby (1997) observed that people do not use the four functions in the same way, derive the same energy from them, or use them equally. So it follows that the order that people use, prefer and develop the four functions leads to differences in preferences, which then compromises the difference between personality profiles.

Quenk (2002) observed that the dominant function is most preferred, most developed, best trusted and most relied upon. The auxiliary function is the second most preferred function, and provides balance to the dominant function. The tertiary function is the third to be developed, practiced and the inferior function is the least developed or used, and can remain in the individual's self-conscious.

The two middle letters are the dominant and auxiliary function for that type, and one of the two functions will be used primarily in the external world, and the other in the internal world. (Fitzgerald and Kirby, 1997). So individuals use their preferred process (their dominant function) in their preferred world (extraverted or introverted) and use their auxiliary function in their non-preferred world. These effects are more pronounced in extroverts than introverts (Fitzgerald and Kirby, 1997) and more difficult to see because the introverted functions focus on the inner world.

As an example, ESTJ's and ISTJ's both have common sensing, thinking and judging preferences, the ISTJ dominant function is for Introverted Sensing, whilst the ESTJ dominant function is for Extraverted Thinking. Introverted Sensors will initially process information internally, and be confident in their ability to accurately process the information. This will manifest itself as an impressive ability to process information, absorb and remember facts, thoroughness and precision. Extraverted Thinkers will

quickly and accurately make judgements about the outside world, and this manifests itself as logical analysis coupled with decisive action.

The dominant function is central to peoples' identity through their lives. Other parts of one's identity can of course develop over time, but the dominant function remains trusted and familiar part, and so the focus and use of the dominant function has primacy (Fitzgerald and Kirby, 1997). The auxiliary function offers balance to the dominant function, with the tertiary and inferior function less developed and less conscious.

The inferior function plays a valuable role in reflection, and has utility understanding oneself (Fitzgerald & Kirby, 1997). This is an area where an individual feels most inadequate, can be prone to act defensively or with inappropriate emotion. So an appreciation of both the dominant and inferior function has utility in leadership development, leadership identity and developing critical skills such as communication and influencing others.

Whilst the eight preferences do combine to form sixteen personality types, the least preferred preference, the type development and the interaction of the preferences all impact an individual's behavior. (Walck, 1997). So for the sake of simplification and to reduce the complexity of the topic, Walck (1997) observed that research involving relationship between type and leadership style can reduce psychological type to function pairs (ST, NT, SF, NF) and single preferences (E vs I, S vs N, T vs F, and J vs P), rather than entire type. These function pairs predict preferences, so for example (S-N) information gathering, (T-F) information evaluating.

Sundstrom & Busby (1997) concluded that subordinates tend to rate mangers in ways that are consistent with the managers' MBTI personality preference. Extroverts were associated with dominance, Intuitives with creativity, Feelers with friendliness, and Judgers with conventional practice and efficiency. Van Eron (1991) found that Intuitives and Perceivers were more likely than Sensors and Introverts to self-report a disposition for transformational leadership. Van Eron (1991) also found that the more strongly the leader held a transformational disposition, the more likely the followers were to rate the leader positively.

## **Self-Awareness**

The study of self-awareness is long standing and can be traced back to China as early as 500 BC and India as early as 600 BC (Leary & Tangney, 2003). Self-awareness has been studied across the social sciences, and applied to areas of interest such as leadership, motivation and psychology for over fifty years. More modern seminal treatments of self-awareness can be seen in the works of James (1890), Mead (1934) and Cooley (1956). A common theme of these studies is that individuals view themselves as both observers and as the subjects of observation.

Duval and Wickland (1972) determined that objective self-awareness leads to contemplation and reflection, that subjective self-awareness is an externally directed view, whilst objective self-awareness is an internally directed view. Said differently, individuals use a reflective process whereby they imagine themselves from the vantage point of another, and compare self-evaluation against others' evaluation. Duval and Wickland (1972) developed a theory of objective self-awareness (OSA). According to OSA, individuals periodically focus inwards to begin a comparison process to compare

themselves against a salient standard. This built on Mead (1934), who had originally theorized that individuals have a motivated desire for accurate assessment of self-worth, or progress against a standard.

De Silva (2004) writes that self-awareness is a critical aspect of psychology that influences behavior. Palmer (2014) asserts that self-awareness requires self-reflection of assumptions and the impact of those assumptions on others. There are gender differences in self-awareness (De Silva, 2004) and the environments that effect levels of selfawareness (Shadidi, 1994).

A number of researchers have focused on self-awareness outcomes, rather than self-awareness conceptualizations. Van Velsor, Taylor & Leslie (1993) defined selfawareness as self / other agreement; leaders whose self-reporting ratings of performance are similar to performance ratings ascribed to them by others are defined as having high self-awareness. Atwater, Ostroff, Yammarino & Fleenor (1998), used this operational standard to determine that highly self-aware leaders tend to have better performance outcomes than less self-aware leaders. This work built on earlier work by Bass & Yammarino (1991), Furnham & Stringfield (1994) and Wohlers & London (1989) each of whose studies had previously operationalized self-awareness as self / other agreement. Atwater and Yammarino (1992) argued that the self-aware individual would have a more accurate self-assessment because "self-awareness stems from the individual's ability to assess others' evaluations of the self and to incorporate those assessments into one's selfevaluation"

According to Ashley & Reiter-Palmon (2012), seminal treatments of leadership identity dealt with self-awareness and again build on earlier work by Duval and Wickland

(1952). Using these earlier studies as a foundation, self-awareness has been found to be a critical part of being a successful leader by numerous investigators such as Hassan & Ahmed, 2011; Goleman , Boyatzis & McKee, 2001; and Gardner, Fisher & Hunt, 2009.

Research on self / rater agreement has explored how congruent perceptions may be related to leadership effectiveness, with Bass & Yammarino (1991) finding that inaccurate self-raters tended to show poorer rated performance than people who rated themselves as others rated them. Atwater & Yammarino (1992) found that that "overraters" were in fact rated lowest by their co-workers, and that self-awareness, using self / rater agreement is positively related to performance, and that the best predictors of leader behavior may differ depending if the leader tends to over-estimate, under-estimate or accurately self-rate.

Without self-awareness skills, a leader's thinking could be distorted by deception (Atwater & Yammarino 1992, Rose, Rouhani & Fisher, 2013). The environment that surrounds leaders is often chaotic and very complex (Axelrod, 2012; Goleman, Boyatzis & McKee, 2001). This can cause self-awareness to be underutilized, lost or abandoned (Nesbit, 2012; Sparrowe, 2005). In an extreme manifestation, Boyatzis (2007) observed that this can lead to a cognitive self-awareness dysfunction that can manifest as a discrepancy between the way that a leaders knows they should behave, and how they actually behave (Festinger, 1957).

A self-awareness dysfunction or deficiency could also result in feedback avoidance (Moss & Sanchez, 2004), which could have negative implications for how a leader gathers evidence, arrives at a conclusion and collaborates with peers and followers (Kunda, 1990). The ability to send and receive feedback is an essential leadership skill,

and one that is directly attributed to self-awareness and leadership effectiveness (Ashley & Reiter-Palmon, 2012, Snowden, 2002).

# **MBTI and Transformational Leadership**

Brown and Reilly (2009) conducted a survey of a population of 2000 followers who provided assessments of 148 managers who had done self-assessments using form K of the MBTI from a high technology US based manufacturer. Their data found no relationship between follower assessments of transformational leadership and leader personality as measured by the MBTI, however leaders did perceive themselves to be significantly more transformational than those that reported to them. Their data showed that self-reports of transformational leadership were significantly associated with leader preference for extraversion over introversion, and intuition over perception. Brown and Reilly (2009) continue "The study calls into question the existence of a relationship between MTBI and transformational leadership", and "The study does not provide any support for the possible utility of the MTBI for the prediction or explanation of transformational leadership behaviors". This supports the Walck (1992) findings that the MBTI might be describing management behaviors, or how managers want to be, rather than how they are perceived by followers. The value in using a MBTI inventory in the context of Transformational leadership might be as a tool to understand the effect that self-awareness has on personality in the delivery of successful Transformational Leadership. Hogan (2007) found that 66% of leaders fail in their work, and Dotlich and Cairo (2009) determined that the cause of these failures due to the CEO behaving in illogical, idiosyncratic or irrational manners. It could be that stress is causal, and so tools

that seek to explain behaviors (like a MBTI), rather than merely describing it have increasing utility.

Roush and Atwater (1992) found that introverts were no more transformational than extroverts, however, critically, they were much more self-aware "Based on the findings that extraverts were no more transformational, and their self-perceptions were less accurate, than introverts, the notion of extraversion as a leadership prerequisite should be questioned" and "leadership evaluation paradigms that place value on extraverted behaviors may be dysfunctional". This study was conducted in a military setting, and so might be less generalizable beyond such a rigid and structured environment.

Judge and Bono (2000) and Hautala (2006) explored the impact of personality on transformational leadership, and examined the extent to which differences in personality (as measured by the Myers Briggs Type Inventory [MBTI]) associated with the perceived differences in leader's behaviors that are characteristic of transformational leadership.

Hautala (2006) then focused in this area to study a group of 439 Finnish leaders and a population of 380 of their followers. This study concluded that there was a relationship between personality (as measured by the MBTI), and transformational leadership. Hautala found that a preferences for extroversion, intuition and perceiving were positively associated with self-reports of transformational leadership, and that a perception by sub-ordinates of a sensing preference by their leaders was associated with transformational leadership behaviors by the manager.

Brandt et al. (2013) reviewed three components of transformational leadership: Inspirational motivation, Intellectual stimulation and Individualized consideration against

personality type. The data shows that focused introverted followers would like to have more intellectual stimulation from their leaders than more social, extroverted followers. This supports Hautala (2007) and Phillips and Bedeian (1994). Brandt et al. (2013) found statistically significant results when comparing sensing- intuitives' needs; sensing types would like more encouragement in the manner of intellectual stimulation, and they also find it more motivating than intuitive followers. They posit that this is because the sensing types are more factual, and the intuitive types are already more visioning and innovative.

Hautala (2005) found that in the case of leaders' self-ratings, intuitive leaders regard themselves are more transformational than sensing leaders, but in the case of followers' ratings of their leaders, the sensing types were more transformational. Hautala (2005) posits that sensing personalities are by nature more transformational, even if they do not notice it, and so they would like to receive transformational leadership from their leaders too.

Hautala (2013) concludes by making a call for more data to gain a more profound understanding of the relationship between the components of transformational leadership and personality type.

### **MBTI and Self Awareness**

Self-awareness, or the ability to see and assess one's behavior as others perceive it is a valuable (Ashford, 1983) and essential factor for success as a leader (Roush and Atwater, 1992; Komvies et al. 2006). In the early 1990's, as 360-degree assessments started to gain traction, researchers started to explore the congruence of self-assessment and other rater agreement (Atwater & Yammarino, 1992; Bass & Yammarino, 1991).

Individuals who were defined as being self-aware were defined as leaders whose self-ratings of their leadership were in agreement with the ratings of the other observers. Atwater et al. (1992) and Roush et al. (1992) have both observed that those individuals whose perception of their own transformational leadership were similar to the perceptions that others had of them were more successful as leaders and considered more transformational.

Walck (1992) observed that leaders who perceived that they had more interaction with their followers than they actually did were poorer performers, and also that less successful leaders were more prone to over-rate themselves than their more successful colleagues. This was confirmed by Bass et al. (1989) who observed that leaders rated by their subordinates as being less transformational had bigger differences between their self-ratings and observer ratings than their more transformational colleagues.

Roush and Atwater (1992) studied MBTI and self-perception accuracy at the US Naval Academy, by studying a purposeful sample of a population of 90 midshipmen. The study was designed to assess the degree by which the MBTI could be used to identify leaders who were rated as transformational, and also how the MBTI could be used to identify those individuals with the more accurate self-perception of leadership. Roush et al. (1992) concluded from their data that the MBTI can indeed to be used to understand transformational leadership behavior, and also to assess the leaders' self-perception accuracy. Leaders who were sensing-feeling types (SF) types were perceived as the most transformational, and used the most positive reinforcement with followers. It was counter-intuitive however, as they had anticipated that those with an intuitive and feeling preference (NF) would be more transformational. NF's typically focus on people more

globally, and do so with the aim of finding long term solutions that advance all. Kirby (1997) found NF's to be typically more insightful better communicators, and generally more enthusiastic. Roush et al. (1992) concluded that the regimented, routine driven environment on the Naval academy limited generalization of their findings because the ability to think long term, posit a big picture solution, and critically for leaders to be creative was stifled. The IS types (introvert, sensing) had the most accurate self-perceptions in the Roush et al. (1992) study. This was confirmed by Fleenor (1994), Fitzgerald (1994).

Hautala (2008) observed that the highest self-reports of transformational leadership were from ESTJ and ENTJ types. The followers regarded the ESTJ types to actually be more transformational, and the ENTJ types as the least transformational.

# Self-Awareness and Transformational Leadership

Zhang, Beattie, Pitkethly & Dempsey (2019) observed in populations of elite athletes that coaches using Transformational leadership behaviors, specifically high performance expectations, were able to modify extraversion, and so lessen distraction from high performance athletes to improve performance. Also coaches using inspirational motivation were able to moderate the relationship between neuroticism and coping with adversity. Building on earlier work by Woodman, Zourbanos, Hardy, Beattie & McQuillan (2010) who had observed that high levels of extraversion were related to high levels of distractibility, and that coaches who used "inspiring, developing and empowering" (Yukl, 2006) transformational leadership type techniques of inspirational motivation were able to improve athletes performance by building good relationships, and inspiring followers to reach their fullest potential (Bass, 1985).

Eysenck & Eysenck (1985) had observed that given extraverts' enjoying intrapersonal events, and willingness to seek high arousal, they might not exert great effort in training if the coach performance expectations are low.

Their data from two separate athletic samples demonstrated that when coach transformational leadership behaviors (inspirational motivation) were perceived as high, potential maladaptive personality types to training contexts ( extraversion) were associated less with distractibility and improved coping with adversity. Zhang et al. also observed the importance of an individualized approach in delivering transformational leadership, that the coach addressing the whole team is not equally beneficial for all players, and they also explored without conclusion a suggestion that intellectual stimulation could also moderate the extraversion-distractibility relationship, because challenging followers to intellectually solve complex problems may satisfy extraverts' needs for high arousal. They conclude that their data provides the first evidence that the use of transformational leadership can moderate the potential impairing effect of extraversion, and provide a tool kit to better handle adversity.

Prochazka, Vaculik, Smutny & Jezek (2018) also observed that extraversion was not linked to transformational leadership, and that intelligence alone did not predict transformational leadership from a cohort of 210 managers and 3,766 followers (all students). Their observation that a relationship between extraversion and transformational leadership surprised them, and disagrees with Bono & Judge (2004) and DeRue, Nahrang, Wellman & Humphrey (2011), both of whom carried out meta-analysis to suggest that extraversion was the strongest predictor of transformational leadership.

## **CHAPTER 3. METHODOLOGY**

This chapter describes the research methods used for this study, and is divided into nine sections: (a) purpose (b) theoretical framework, (c) research questions, (c) research design, (d) population, (e) instrumentation, (f) data collection, (g) data analysis, (h) human subjects protection (IRB) and (i) assumptions and research bias.

## Purpose

The purpose of this study is to test hypotheses related to the differential effects of Myers-Briggs personality type preferences on self-awareness operationalized as the differences between self- and other-ratings of transformational leadership behaviors.

# **Theoretical Framework**

In this study, the independent variables were the eight Jungian personality type preferences operationalized by the MBTI: Introversion (I) vs Extraversion (E), Sensing (S) vs Intuition (N), Thinking (T) vs Feeling (F) and Judging (J) vs Perceiving (P), and the four functional pairs (ST, NT, SF, NF). These personality preferences describe how individuals characteristically deal with their environment. The functional pairs address an individual's approach to life, based on a combination of: 1) the types of information primarily attended to (sensing or intuition), and 2) the how decisions are typically made (thinking or feeling).

The dependent variables in this study were the four behavioral dimensions of transformational leadership theory: Idealized Influence (separately operationalized as Attributed (II-A) and Behavioral (II-B)), Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC). The four transformational leadership behavioral dimensions are conceptually and factorially independent of each other,

although they are highly correlated in practice (Bass & Avolio, 1993).

For purposes of assessing the differential effect of personality on ratings of leadership behaviors, self-awareness will be defined in this study as the different between self- and other-agreement on ratings of the four behavioral dimensions of transformational leadership. Self-awareness has been so defined and operationalized n this way by a number of scholars (Velsor, Taylor & Leslie, 1993, Wohlers & London, 1989). Given that self-awareness is an inwardly-focused evaluative process in which individuals make self-comparisons against an internalized standard with the goal of better self-knowledge and improvement, Duval and Wicklund (1972) argued that individuals often view themselves as both observers and subjects of observation. This matters, because self-awareness enables individuals to better adjust to their environment, and so anticipate the needs of their followers, and what will matter to, and resonate with, others.

The hypothesized differential effects of Myers-Briggs personality preferences on leader self- and other-ratings of transformational leadership assessed in this study are illustrated in Figure 1.



Figure 1. Hypothesized differential effects of Myers-Briggs Personality Preferences on Transformational Leadership

# **Research Questions**

The research examined the differential effects of Jungian personality type preferences and functional pairs on differences in self- and other-ratings of transformational leadership practices among a population of leaders in a United Statesbased industrial business. The following research questions and hypotheses guided the study:

Overarching Research Question: What is the differential effect of Jungian personality preferences on self-awareness operationalized as the difference between self- and other-ratings of transformational leadership behaviors?

H1a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type preferences of Extraversion and Thinking

H1b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type preference of Sensing and Perceiving.

H2a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences NF and NT

H2b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences ST and SF.

H3a. There will be significantly more transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Introversion and Perceiving.

H3b. There will be significantly less transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Extraversion and Judging.

H4a. There will be a significant interaction effect between self vs. other perceptions of leadership behaviors on all four dimensions of transformational leadership: Idealized Influence (II-A & II-B), Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC).

## **Research Design**

This cross-sectional, quantitative study utilized archival data gathered in 2018 from a single, international industrial organization based in the mid-west of the United States. The research explored the effects of Myers Briggs personality type preferences on differences in self vs. other ratings of transformational leadership behaviors, as measured by the Self and Rater forms of the Multifactor Leadership Questionnaire (MLQ 5X). Leaders' own self ratings of transformational leadership were compared to the aggregate mean ratings of their direct reports (using the MLQ 5X instrument). Both self and other ratings of transformational leadership were analyzed for differences based on selfreported Myers-Briggs personality type pair preferences and functional types (cognitive styles). The difference between self vs other ratings of transformational leadership were analyzed for significance, as an indicator of self-awareness. Finally, the interaction of

Myers-Briggs type preference on self-and other ratings of transformational leadership was assessed for each Myers-Briggs dichotomous pair.

For purposes of analysis, and consistent with the assessment instruments to be employed, Myers-Briggs type preferences and functional pairs were both be treated as categorical variables, while both self and other ratings of transformational leadership were continuous. Data were analyzed using t-tests and analysis of variance using Excel. The analysis examined whether there were significant differences in the observed mean MLQ scores (between self and rater) for leaders based on Myers-Briggs type preferences. **Population** 

The population studied were leaders in a mid-sized US industrial manufacturer, all of whom are participants in the ongoing Leadership Development Program that the business has run for several years. The leaders range from Executive Vice President to Branch Manager, while some of the direct reports are also participants in the Leadership Development Program. The participants had all provided periodic survey data as part of the Leadership Development Program (LDP). The data used for this study was archival, and had been stripped of all identifiers, or any way to link the data back to an individual. **Instrumentation** 

The surveys that the LDP participants completed include the two instruments that will be used for this study; the first is the Myers Briggs Type Indicator (MBTI), Form M that assesses self-reported personality type preferences, and the second is the Multifactor Leadership Questionnaire MLQ 5X that assesses transformational leadership behaviors. The study participant leaders completed a self-assessment of their perceived transformational leadership practices, using the MLQ-Self form, and their subordinates completed the MLQ-Rater form, providing 360-degree feedback of the transformational leadership they observed these leaders practicing. Both forms of the MLQ consists of 45item Likert-type survey questions. In addition to measuring transformational leadership behaviors, the MLQ also contains questions assessing dimensions of transactional leadership (Management by Exception: Active, Management-by-Exception: Passive, Contingent Reward and Laissez-Faire) and three outcomes of leadership: Effectiveness, Satisfaction with Outcome and Extra Effort, although these data are not tested nor included in this study. The other aspects of transformational leadership assessed by the MLQ 5X are Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individual Consideration. Idealized Influence- Attributed (II-A), and Idealized Influence – Behaviors (IIB) will both be used for analysis.

The MLQ is considered a well validated tool for measuring transformational leadership, and thus has been used extensively in prior research (Awamleh & Gardner, 1997). Because of its validity, and relevance to the current research, the MLQ was used for this dissertation. Other transformational leadership instruments widely used in practice, such as the Leadership Practices Inventory (LPI) (Kouzes & Posner, 1990), does reflect the same factor structure, is less reliable, and therefore is less often used in published empirical research (Bass & Riggio, 2006).

## **Data Collection**

A cross sectional sample of archival data was obtained, reflecting the assessment of 164 leaders and their 1461 direct report employees who work for a mid-sized US industrial manufacturer. The company recently became a publicly traded business, and has faced tough market conditions and a turbulent stock price since the Initial Public offer

in 2017. All participants are enrolled in a company-wide leadership development initiative facilitated by an external contractor for the company, focused on leadership practices and growth enabling behaviors to enhance engagement and promote positive organizational change.

The archival data used for this analysis had been collected by a commercial thirdparty assessment agency contracted by the company to track employee development, and has only been used internally by the Human Resource department of the company to present the overall results obtained. Results of the data had never been displayed publically, however individual's results had been made available to participants. Leaders were only provided aggregated follower ratings.

The agency that collected the data for this study is experienced and licensed to administer the assessment instruments to be employed in this study, and members of the target organization population being studied were aware that the de-identified data might be used for further research, and were familiar with the procedures employed by the agency to maintain the confidentially of data collected. All data provided for this study by the data custodian had been anonymized and provided to the researchers as raw data. Data provided to the co-investigators did not contain any personally identifying information or key codes that would permit responses to be linked to individual respondents. While the identity of the company where data were collected was known to the researchers, institutional confidentiality has be maintained in the presentation of research findings.

#### Instrumentation

Archival data obtained for analysis in this study had been previously collected using two validated survey instruments: The Myers Briggs Type Indicator (MBTI) Form M, and the Self and Rater forms of the Multifactor Leadership Questionnaire (MLQ 5X). Both instruments were administered online by a reputable survey administration agency contracted by the company as part of the ongoing leadership development initiatives.

*Myers-Briggs Type Indicator (MBTI)*. The MBTI has been successfully used as a personality assessment instrument for more than 50 years, with over three million administrations each year (Michale, 2003). It is predicated on Jung's theory of psychological type and was developed by Isabel Briggs Myers and her mother, Katherine Biggs to make the insights of Jung's type theory more accessible to individuals and groups. The instrument uses a self-report, forced choice questionnaire format to assess personality preferences along four polar dimensions. : Introversion (I) vs Extraversion (E), Sensing (S) vs Intuition (N) , Thinking (T) vs Feeling (F) and Judging (J) vs Perceiving (P). Using the results of this assessment, each individual completing the instrument can be categorized into one or the pole of each dichotomous pair, regardless of the strength of their preference for that type-pair preference. The combination of the four type pair preferences identified by the MBTI assessment determines which of 16 personality types characterize an individual's Myers-Briggs type (Myers, McCaulley, Quenk & Hamer, 2003).

The MBTI Form M was designed as a self-report inventory that takes 15 minutes to complete, and has been demonstrated to have suitable levels of internal validity, high internal reliability, consistent test-retest reliabilities, with agreement much greater than by chance (Michael, 2003), and reliability coefficients consistently above .80 (Myers et al.

2003). Gardner and Martinko (1996) also reported excellent reliability and found that type scores tend to be stable over time.

The design of the MBTI instrument has been examined by Myers et al. (2003) to provide evidence of the validity of the four separate preference scales that appear on the indicator. Because this is the level that the measurements within the MBTI actually occur, it is important to establish validity of the separate scales. Myers et al. (2003) used factor analysis of the MBTI item pools, were able to correlate the MBTI continuous scores with scores from other instruments, and carried out confirmatory categorical analysis of typical behaviors associated with individuals of the different preferences. The MBTI Manual (2003) correlates the MBTI preferences of individuals with other instruments which are in the direction that psychological type theory would predict.

Gardiner and Martinko (1996) observed behavior by type that is consistent with the foundational theory. Myers at al. (2003) also found that participants repeatedly select their own type description, rather than alternative type descriptions at a statistically highly significant rate.

*Multifactor Leadership Questionnaire (MLQ 5X).* The Multifactor Leadership Questionnaire (MLQ 5X) was developed by Bass & Avolio (1992) to operationalize aspects of leadership behavior originally described by Burns (1978). Tejeda (2001) asserts the MLQ is the most researched, validated and frequently used leadership instrument in the world. A number of different approaches have been used to confirm the reliability of the MLQ by examining resulting agreement among respondents (Bass, 1998). These include rate, re-rate consistency, subordinate-superior agreement and peer rating based on small group size. Bass (1985) found positive relationship between high

MLQ ratings and superior financial performance, effective transformational leadership and performance evaluations from superiors and subordinates. Tejeda (2001) found that items from the MLQ showed evidence of predictive and construct validity, that transformational subscales were highly inter-correlated in support of convergent validity. Bass & Avolio (1999) found that the transformational leadership scales were negatively related the both management-by-exception and laissez-faire leadership, thus providing support for discriminant validity.

Data collected using two forms (Self and Rater) of the MLQ 5X will be provided by the data custodian for analysis in this study: Self-report ratings of leaders' own leadership behavior assessed using the Self MLQ Form and other-report ratings of leaders' leadership behaviors assessed by direct reports using the Rater form of the MLQ 5X.

### **Data Collection**

The MBTI and MLQ data were collected from participants following introduction at a pre-training Skype meeting, with participants asked to complete both online within two weeks of the February, 2018 distribution date. Both instruments were administered on line by a well-regarded independent consulting practice and data custodian that has been used by the company successfully for several years to conduct this type of on-line survey.

The MBTI results were tabulated by the data custodian prior to providing results to the co-investigators. Only raw data from the MLQ 5X and the MBTI type will be provided for analysis to the researchers.

The leader participants in the study would have been asked to nominate their raters, and told that they must select employees who have directly observed their behavior in their leadership role. These employees will then have been contacted by the independent survey administration consultant to solicit their completion of the MLQ Rater Form on line. All participants had been informed their responses would be anonymized and stripped of any personal identifiers, to ensure participant identity is protected, and so observers can rate their participant's leadership behavior honestly and with no fear of identification or recrimination. Only averaged rater scores for each leader, calculated by the data custodian following survey administration, were provided to the co-investigators for analysis as part of this study. Van Velsor et al. (1993) found that the average of ratings is more reliable than using a single rating.

No personally identifying information was transmitted by the data custodian. Responses were coded to permit leader and employee data to be collated for analysis, but no key code linking responses to participants will be provided by the data custodian to the coinvestigators, and all data so transmitted will be de-identified.

#### **Data Analysis**

The anonymous raw data was provided by the data custodians to the coinvestigators as an Excel spreadsheet. Data were stored in a password protected file to which only the co-investigators had access during analysis.

The data were analyzed using the Excel Analysis ToolPak add in. The Statistical Package for the Social Sciences (SPSS) for quantitative analysis was used to spot-check some of the tests for accuracy. Descriptive statistics will be presented to describe the study participants' dichotomous personality type preferences (I vs E, S vs N, T vs F, and J vs P), cognitive decision making styles (ST, SF, NT, and NF), and dimensions of transformational leadership as rated by both self- (Leader) and subordinate (Ratings). For research question differences in self and other-ratings of Transformational Leadership behaviors were assessed for each of the Myers-Brings personality type pair preferences: Extraversion (E) vs. Introversion, Sensing (S) vs. Intuition (N), Thinking (T) vs. Feeling (F), and Perceiving vs. Judging. Treating the dependent variable of MLQ score (Idealized Influence (IIA , IIB) , Individual Consideration, Intellectual Stimulation and Inspirational Motivation ) as continuous, a number of independent *t*-Tests of means (paired two sample) were performed to compare the differences between leaders and raters MLQ scores of the dichotomous personality type pairs being studied. These scores were analyzed according to both self-scores and the rater-scores to see if there are significant differences in the perception of Transformational Leadership behavior.

The *t*-Test: paired two sample for means computes the difference between the two variables for each type preference, and tests to see if the average is significantly different from zero. Van Velsor et al. (1993) and Wohlers & London (1989) found that the mean or average rating to be more reliable than a single rating, which confirmed earlier work by Mount (1984) and Miner (1968). The scores are determined from the MLQ Self and Rater forms, where a score of 0 means not at all, 1 means once in a while, 2 means sometimes, 3 means fairly often and 4 means frequently, if not always. The rater scores will be the mean or average of the scores submitted.

These differences were examined to replicate the original Roush and Atwater (1992) study that used the MBTI to understand transformational leadership and selfperception accuracy, and Brandt (2016) who used the Posner and Kouzes (1990) LPI

instrument, a different instrument to measure Transformational Leadership behaviors to determine which MBTI personality type has the highest self-perception accuracy of their Transformational behaviors.

For the second research question; do the transformational leadership practices of as perceived by self and others differ by Myers-Briggs cognitive (functional) pairs (ST, SF, NT, NF) a one-way Analysis of Variance (ANOVA) was used with Tukey's post hoc analysis. A one way ANOVA is used to test the difference between the means of two groups on a single variable. The self-score and the follower score mean were analyzed for significant differences simultaneously for all four functional pairs. A subsequent post hoc analysis was conducted to identify which groups were significantly different from each other with respect to transformational leadership behaviors rated by self and others on the MLQ.

Research question three examined whether more transformational leadership practices are observed by raters among leaders with a combination of Myers-Briggs Introvert and Perceiving personality type, and separately whether those leaders who have a preference for Extraversion and Judgement are observed to demonstrate less Transformational Leadership by their raters. A *t*-Test (paired two-sample) of means for self vs follower ratings was used to determine differences in personality type preference (Extraversion vs Introversion, Sensing vs Intuition, Thinking vs Feeling and Judging vs Perceiving) on each transformational leadership practice.

Finally for Research Question four, a two factor ANOVA with replication was used to test interaction effect between self vs rater perceptions of leadership behaviors on the four dimensions of transformational leadership: Idealized Influence (IIA, IIB),

Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC).

Table 1 presents the research questions, both dependent and independent

variables, and the statistical analysis used for each research question.

Table 1. Research questions, Variables and Data Analysis tests

<b>Research Question</b>	Independent Variable	Dependent Variable	Data Analysis
Research Question         1) Is there a significant differences between the self and observed transformational leadership practices among Extravert and Thinking preference leaders and their raters?         There are will be a significant differences between self and observed transformational practices among Sensing and Perceiving preference leaders and their raters.	Independent Variable Personality Preference: Extraversion/Introversion Sensing/Intuition Thinking/Feeling Judging/Perceiving	Dependent Variable         MLQ mean scores:         Idealized Influence (IIA,         IIB)         Individual Consideration         (IC)         Intellectual Stimulation (IS)         Inspirational Motivation         (IM)         Self / Follower         Performance scores	Data Analysis         t Test of         individual         samples         Chi Squared test         of Independence
2) Do ratings of transformational leadership practice between self and other differ by NT, NF and ST, SF Myers-Briggs cognitive styles	Cognitive Style: Intuition/Feeling(N/F) Intuition/Thinking (N/T) Sensing / Thinking (S/T) Sensing/Feeling (S/F)	MLQ Mean scores : Idealized Influence (IIA, IIB) Individual Consideration (IC) Intellectual Stimulation (IS) Inspirational Motivation (IM)	One way Analysis of Variance (ANOVA)
3) Is more transformational leadership practice behavior reported by raters for leaders with preferences for Introversion and Perceiving?	Followers (Raters)	MLQ mean score : Idealized Influence (IIA, IIB) Individual Consideration (IC) Intellectual Stimulation (IS) Inspirational Motivation (IM)	Comparison of means , <i>t</i> -Test
Is less transformational leadership practice behavior reported by raters for leaders with preferences for Extraversion and Judging?	Personality Preference: Extraversion /Introversion Sensing / Intuition Thinking / Feeling Judging/ Perceiving	Idealized Influence (IIA, IIB) Individual Consideration (IC) Intellectual Stimulation (IS) Inspirational Motivation (IM)	One way Analysis of Variance (ANOVA)

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4)	Is there a significant	Self / Rater	Idealized Influence (IIA,	Two Factor
	interaction effect		IIB)	ANOVA with
	between self and		Individual Consideration	Replication to test
	rater perceptions of		(IC)	interaction.
	leadership behaviors		Intellectual Stimulation (IS)	
	on the four		Inspirational Motivation	
	dimensions of		(IM	
	transformational			
	leadership			

# Human Subject Protection (IRB)

IRB approval was obtained for this study. The data analyzed were archival, and had been collected by a commercial third party assessment agency that is used to track employee development. All data provided by the data custodian was anonymized and was subsequently coded for analysis by the researchers. The procedures employed by the data custodian to anonymous the data were designed to ensure that no personally identifying information or key codes were released that could permit participants to be identified or responses to be linked back to individuals. While the identity of the company where data were collected will be known to the researchers, institutional confidentially will be maintained in all presentations of research findings.

The following steps were taken to ensure all aspects of this study were planned and executed strictly according to ethical standards

*Certification*. The researchers had both successfully completed the CITI Program course certifying investigators on best practices for protecting human subjects during research IRB submissions.

*Submission.* The study was submitted the Xavier University IRB for review and approval was received prior to the onset of the research activities, and that the researcher has followed the IRB approved rollout of the study.

*Permission*. A letter of permission was obtained from the company that provided the data to be analyzed for this study. Permission was granted to use the anonymized data, and confirmation was also been received that they have no internal review procedure that requires further review of research procedures.

*De-identification*. Data were de-identified by the data custodian, prior to being provided to the researchers. No individual identifiers that would permit data to be linked to individual participants were provided with the raw data.

*Institutional confidentiality.* The research findings might be published by the researchers, however institutional confidentiality will be preserved in all published reports and presentations.

## **Assumptions and Research Bias**

Given the critical nature of leadership, there is an underlying assumption of honesty, given that the individuals participating in the study are doing so willingly, and the instruments and survey tools are carefully designed to provide complete upward anonymity and that confidentiality will be preserved. Data will be gather from the individuals that have provided informed consent, and will be retained as anonymized data for three years. In addition the participants are volunteers who can withdraw from the study at any time with no ramifications.

The sample is assumed to be representative of leadership within the organization, and those who observe the leaders are also assumed to be observing typical behaviors and similar phenomenon because the inclusion criteria is uniformly applied.

Given that the data used for this study were originally collected using key-codes that permitted feedback to participants in the context of a developmental program

designed to help these employees become more effective leaders, it is possible results reflect some acquiescence or social desirability bias. However, the fact that the development program was not directly tied to any career advancement initiates within the organization may mitigate somewhat against this risk.

One of the two co-researchers is a leader in the company were data for this study was collected. No data pertaining to this leader was included in the dataset provided by the data custodian. This researcher has not formed any pre-disposed view as to the outcome of the research, so as to avoid confirmation bias.

## **CHAPTER 4. ANALYSIS AND PRESENTATION OF THE FINDINGS**

This chapter reports the results of the statistical analyses of data in this study, beginning with the descriptive statistics on Myers-Briggs frequencies and percentages for the population being studied. Following this, the descriptive analysis of self (leader) and other (rater) ratings of transformational leadership behaviors is presented. Then the mean differences in self (leader) and other (rater) ratings of transformational leadership behaviors are presented for each of the Myers-Briggs dichotomous pairs. Finally results of the statistical analyses required to test each of the study's four research hypotheses are presented to assess the differential effects of Myers-Briggs personality type preferences on self- and other- ratings of transformational leadership.

The order of data presentation in Chapter 4 progresses from overall scores for both personality and transformational leadership, assessed by both the leader's (self) raters (others), to a detailed examination of the effect of personality on the independent self-ratings by the leader, and aggregated other-ratings (raters), of transformational leadership. In conclusion, and having considered the separate and differential effects of the MBTI personality preferences on transformational leadership, the analysis of interaction effects is presented.

# **Descriptive Analysis of Data**

The archival data obtained for analysis in this study were comprised of 164 leaders, and 1461 raters. The leader population was comprised of 151 (92 %) male and 13 (8%) female leaders. Table 2 presents the descriptive analysis of gender for leaders included in the dataset.

## SELF-AWARENESS, PERSONALITY, LEADERSHIP

Leaders	Ν	% of sample
Male	151	92
Female	13	8

Table 2. Gender breakdown of leaders participating in the study

Given the overwhelming percentage of male leaders, which is typical of this type of industrial manufacturing organization, gender was not further considered as part of this study.

## **Myers-Briggs Personality Preferences**

The sample frequencies and percentages of MBTI dichotomous preferences

(Extraversion (E) vs. Introversion (I), Sensing (S) vs. Intuition (I), Thinking (T) vs.

Feeling (F), and Judging (J) vs. Perceiving (P) are shown in Table 3.

Table 3. Frequency of the Dichotomous Personality Preferences

MBTI	n	%	MBTI	N	%	MBTI	n	%	MBTI	n	%
E v. I			N v S			T v. Fr			J v. P		
E	105	64	N	79	48	Т	79	48	J	98	60
Ι	59	36	S	85	52	F	85	52	Р	66	40
Total	164	100		164	100		164	100		164	100

Table 4 presents the frequency of the four MBTI cognitive styles (NF, NT, SF, ST).

Table 4. Frequency of the four MBTI Cognitive Styles

MBTI Cognitive Style	n	%
NT	40	24.3
NF	39	23.7
ST	39	23.7
SF	46	28.3
## **Transformational Leadership**

The following section presents descriptive data for ratings of Transformational Leadership (TL). Two ratings of TL were calculated for each leader across the five MLQ 5X scales: one self-report rating (Leader), the other the computed average ratings of employees (Raters) reporting to that leader. The MLQ 5X scores include 5 subscales corresponding to each of the TL dimensions: Idealized Influence-Attributed, Idealized Influence-Behavior, Inspirational Motivation, Intellectual Stimulation and Individualized Consideration. The mean overall TL scores combining all subscales are also reported for leader self-ratings and average employee-ratings.

Table 5 presents the mean scores, standard deviations and statistical significances of each the Transformational Leadership dimensions for both leaders' self-ratings on the MLQ 5X subscales and the computed average ratings of their direct reports. Also presented are the results of paired, two-sample t-tests comparing the mean scores for self-(leader) and other- (raters) ratings on each of the five transformational leadership (TL) subscales and composite TL scores. This overall comparison of leader and rater TL scores is presented as a baseline against which to interpret the differential effects of personality subsequently examined in this analysis.

Before considering the effect of personality, across the consolidated total of all of the MLQ 5X subscale scores, Leaders scored themselves significantly higher than their Raters on Transformational Leadership, t (164) = 6.48, p < .001. Said differently, overall leaders saw themselves as more transformational than their followers perceived them to be.

Table 5. Mean Score and T-test comparison for Leaders and Average Raters scores on

	Leader		Raters		Т	df	p
	Mean	SD	Mean	SD			
	Score		Average				
	n = 164		Score				
MLQ 5X							
Leadership							
Dimension							
Idealized Influence	3.13	0.62	2.71	0.41	7.99	163	<.001
(Attributed)							
Idealized Influence	2.69	0.24	2.75	0.23	-2.68	163	<.01
(Behavior)							
Inspirational	2.71	0.31	2.63	0.19	3.48	163	<.001
Motivation							
Intellectual	2.61	0.24	2.65	0.26	-1.94	163	<.051
Stimulation							
Individualized	2.86	0.26	2.75	0.36	3.41	163	<.001
Consideration							
Overall Mean	2.80	0.33	2.70	0.29	6.48	819	<.001

the MLQ Leadership Dimensions.

Significant differences were also found between Leader and Rater scores on four of the five subscales of Transformational Leadership, with Leaders scoring themselves higher then Raters on three dimensions of TL (Idealized Influence - Attributed, t (164) = 7.99, p < .001; Inspirational Motivation, t (164) = 3.48, p < .001; and Idealized Consideration, t (164) = 3.41, p < .001), and Raters scoring Leaders higher on one dimension of TL (Idealized Influence – Behavior, t (164) = -2.68, p < .01. No significant difference between Leaders and Raters on the fifth dimension of Transformational Leadership, Intellectual Stimulation, t (164) = -1.94, p < .054). Said differently, leaders saw themselves as significantly more transformational than their followers perceived them to be on dimension of Idealized Influence - Attributed, Inspirational Motivation, and Idealized Consideration. At the same time leaders saw themselves as less transformational than their followers perceived them to be with respect to Idealized Influence – Behavior. There was no difference between how leaders and their followers perceived them on Intellectual Stimulation. Thus while overall, leaders saw themselves as more transformational than their followers perceived them to be, this effect was not observed across all dimensions of transformational leadership, and was reversed on one dimension of TL.

While the large sample size in this study mitigates against any threat of nonnormal distribution in using parametic analysis to analyze these data (Ghasemi & Zahediasl, 2012), results of the pair t-tests were cross-checked using non-parametic Wilcoxian Signed Ranks Test. The Wilcoxian Signed Ranks test is an alternative to the paired samples t-test when there are concerns about the assumption of normality may not hold true for a particular dataset. The assumptions underlying the Wilcoxian SRT are the same as the paried t-test, exept for the assumption of normal distribution of data (McDonald, 2014). The resulting Z-scores corroborated the findings of significant difference between leaders' and followers' ratings on three dimensions of Transformational Leadership, Idealized Influence - Attributed (Z = -6.778, p < .001); Idealized Influence – Behavior (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation (Z = -2.738, p < .01; and Inspirational Motivation 3.329, p < .001). Conflicting results were obtained on the other two dimensions of Transformational Leadership, finding significant difference between leaders' and followers' ratings on Intellectual Stimulation (Z = -2.552, p < .05), and no significant difference on Individualized Consideration (Z = -1.948, p < .051). These additional nonparametric tests were run because the assessment of normality and visual inspection of

plot distributions suggested some departure from normality on a few of the Transformational Leadership subscales.

# Leader-Rater Differences in Transformational Leadership based on Leader MBTI

Leaders' self-ratings and followers' other-ratings were subsequently examined across all five MLQ 5X subscales for differences in transformational leadership based on Myers-Briggs personality type preferences (MBTI). To conduct these data analyses, two sample t-tests, assuming equal variances, were performed. The analyses reflect unequal n's because the MBTI provides an ipsitive assessment of leaders on each of the dichotomous type pairs. Leaders were classified according to the dimension on each MBTI dichotomy for which they scored highest. Results are these analyses are presented separately below for self- (Leader) and other- (Rater) ratings of TL.

*MBTI dichotomous pair analysis for Leader self-ratings of TL*. When comparing self-ratings of transformational leadership for leaders scoring highest on the extroversion (E) versus introversion (I) dimension of the MBTI, using a t-test (two sample, assuming equal variances), significant differences were observed on three of the 5 MLQ scales (See Table 6). Those leaders with an Extroverted preference scored themselves significantly higher the leaders with an Introverted preference on two dimensions of transformational leadership (Idealized Influence - Attributed, t (105) = 19.34, p < .001; Inspirational Motivation, t (105) = 7.70, p < .001), and lower on one dimension (Intellectual Stimulation with t (105) = - 4.40, p < .001). The differences for self-ratings on Idealized Influence - Behavior and Individualized Consideration were not statistically significant for leaders preferring extroversion versus introversion.

E vs I	Transformational	Leader	ship (Leader self-	-ratings)	Т	Df	Р
MLQ 5X	Mean Score (E)	SD	Mean Score (I)	SD			
Leadership Style	n = 105		n = 59				
Idealized	3.52	0.37	2.43	0.26	19.34	162	<.001
Influence							
(Attributed)							
Idealized	2.72	0.39	2.64	0.23	2.01	162	.04
Influence							
(Behavior)							
Inspirational	2.83	0.27	2.50	0.22	7.70	162	<.001
Motivation							
Intellectual	2.55	0.21	2.71	0.22	-4.40	162	<.001
Stimulation							
Individualized	2.88	0.27	2.82	0.22	1.39	162	.17
Consideration							

Table 6. Differences in self-ratings of Transformational Leadership for Leaders with E

vs. I MBTI p	oreferences.
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There were no statistically significant differences among leaders' self-ratings of transformational leadership behaviors for those leaders with a Myers-Briggs personality

type preference for Intuition versus Sensing (see Table 7).

Table 7. Differences in self-ratings of Transformational Leadership for Leaders with N

N vs S	Transformation	nal Lead	ership (Leader sel	f-ratings)	Т	df	P
MLQ 5X	Mean Score	SD	Mean Score (S)	SD			
Leadership Style	(N) n = 76		N = 85				
Idealized	3.22	0.59	3.04	0.63	1.87	162	.06
Influence							
(Attributed)							
Idealized	2.62	0.22	2.59	0.24	0.78	162	.43
Influence							
(Behavior)							
Inspirational	2.07	0.32	1.96	0.31	2.05	162	.04
Motivation							
Intellectual	2.71	0.26	2.66	0.22	1.40	162	.16
Stimulation							
Individualized	2.85	0.28	2.85	0.23	-0.03	151	.97
Consideration							

vs. S MBTI preferences.

There were no statistically significant differences among leaders' self-ratings of

transformational leadership behaviors for those leaders with a Myers-Briggs personality

type preference for Thinking versus Feeling (see Table 8).

Table 8. Differences in self-ratings of Transformational Leadership for Leaders with T

T vs F	Transformation	al Leaders	hip (Leader self-ra	atings)	T	df	Р
MLQ 5X	Mean Score	SD	Mean Score (F)	SD			
Leadership Style	(T) n = 79		n = 85				
Idealized	3.08	0.61	3.17	0.60	-0.98	162	.32
Influence							
(Attributed)							
Idealized	2.59	0.24	2.63	0.23	-0.83	162	.41
Influence							
(Behavior)							
Inspirational	2.01	0.33	2.01	0.21	-0.57	162	.56
Motivation							
Intellectual	2.70	0.21	2.67	0.25	-1.28	162	.20
Stimulation							
Individualized	2.86	0.28	2.85	0.22	0.34	162	.73
Consideration							

vs. F MBTI preferences

Table 9. Differences in self-ratings of Transformational Leadership for Leaders with J

versus P MBTI preferences.

J vs P	Transformationa	l Leader	ship (Leader self-1	ratings)	Т	df	Р
MLQ 5X	Mean Score (J)	SD	Mean Score (P)	SD			
Leadership Style	n = 98		n = 66				
Idealized	3.18	0.6	3.04	0.64	1.34	162	.18
Influence							
(Attributed)							
Idealized	2.59	0.22	2.64	0.22	1.86	162	.07
Influence							
(Behavior)							
Inspirational	2.03	0.33	1.98	0.30	0.81	162	.41
Motivation							
Intellectual	2.72	0.20	2.64	0.26	-1.24	162	.21
Stimulation							
Individualized	2.86	0.26	2.84	0.22	0.42	162	.67
Consideration							

There were no statistically significant differences among leaders' self-ratings of transformational leadership behaviors for those leaders with a Myers-Briggs personality type preference for Judging versus Perceiving (see Table 9).

*MBTI dichotomous pair analysis for Raters' other-ratings of TL*. Differences in followers' other ratings of transformational leadership across the five MLQ 5X subscales based on Myers-Briggs dichotomous pairs type preferences were also examined using two sample t-tests, assuming equal variances.

Raters rated extroverted leaders as exhibiting significantly less Intellectual Stimulation, t (105) = -4.05, p < .001, and Individualized Consideration t (105) = -2.90, p < .01 than introverted leaders (see Table 10). There are no statistically significant differences in other-ratings of leaders' Idealized Influence-Attributed, Idealized Influence - Behavior, or Inspirational Motivation, based on E versus I Myers-Briggs type preferences.

E vs I	Transformational ]	Leadersh	ip (followers' othe	er-ratings)	Т	df	Р
MLQ 5X	Mean Score (E)	SD	Mean Score (I)	SD			
Leadership Style	n = 105		n = 59				
Idealized	2.73	0.41	2.66	.42	1.02	162	.31
Influence							
(Attributed)							
Idealized	2.76	0.23	2.72	0.20	1.01	162	.31
Influence							
(Behavior)							
Inspirational	2.63	0.20	2.62	0.19	0.47	162	.63
Motivation							
Intellectual	2.58	0.34	2.75	0.26	-4.05	162	<.001
Stimulation							
Individualized	2.69	0.37	2.85	0.30	-2.90	162	<.01
Consideration							

Table 10. Rater observed differences between E vs I preference Leaders.

### SELF-AWARENESS, PERSONALITY, LEADERSHIP

Followers rated leaders with an MBTI type preference for intuition (N)

significantly higher on intellectual stimulation (IS) than leaders with a type preference for

sensing (S), t(76) = -2.38, p < .01 (see Table 11). No other statistically significant

difference were found among other-ratings of MLQ5X scales for N versus S leaders

Table 11. Rater observed differences between N vs S preference Leaders.

N vs S	Transformation	nal Leader	ship (followe	ers' other-	Т	df	P
	ratings)						
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	(N)		Score (S)				
	n = 76		n = 85				
Idealized	2.74	0.40	2.68	0.42	0.89	162	.37
Influence							
(Attributed)							
Idealized	2.71	0.26	2.78	0.33	-1.86	162	.06
Influence							
(Behavior)							
Inspirational	2.61	0.20	2.64	0.18	-0.88	162	.37
Motivation							
Intellectual	2.59	0.26	2.69	0.24	-2.38	162	.01
Stimulation							
Individualized	2.77	0.33	2.72	0.37	-0.89	162	.37
Consideration							

There were no statistically significant differences found among followers' ratings of transformational leadership behaviors for Leaders with MBTI type preference of Thinking (T) versus Feeling (F) (see Table 12).

No statistically significant differences were found among followers' ratings of leaders' transformational leadership among leaders with MBTI preferences for Perceiving (P) over Judging (J) (see Table 13).

F vs T	Transformation ratings)	nal Leaders	ship (followe	ers' other-	Т	df	P
MLQ 5X Leadership Style	Mean Score (F) n = 85	SD	Mean Score (T) n = 79	SD			
Idealized Influence (Attributed)	2.74	0.43	2.67	0.36	1.14	162	.27
Idealized Influence (Behavior)	2.75	0.21	2.74	0.21	0.39	162	.69
Inspirational Motivation	2.65	0.26	2.64	0.26	-0.07	162	.94
Intellectual Stimulation	2.74	0.35	2.75	0.37	0.31	162	.76
Individualized Consideration	2.65	0.20	2.61	0.19	1.31	162	.19

Table 12. Rater observed differences between F vs T preference Leaders

Table 13. Rater observed differences between J vs P preference Leaders.

J vs P	Transformation	al Leaders	ship (followe	ers' other-	T	df	P
MLQ 5X Leadership Style	Mean Score (J) $n = 98$	SD	Mean Score (P) n = 66	SD			
Idealized Influence (Attributed)	2.74	0.40	2.65	0.42	1.32	162	.19
Idealized Influence (Behavior)	2.75	0.22	2.75	0.22	-0.04	162	.96
Inspirational Motivation	2.63	0.17	2.62	0.20	0.25	162	.80
Intellectual Stimulation	2.63	0.26	2.67	0.26	-0.72	162	.47
Individualized Consideration	2.76	0.36	2.73	0.36	0.57	162	.56

# **Differential Assessment of MBTI and Transformational Leadership Ratings**

A series of statistical analyses were performed to illuminate stated hypotheses. Self and other ratings of Transformational Leadership were compared based on leaders' MBTI scores. The first set of analyses assessed differences in self and other ratings of transformational leadership based on MBTI dichotomous preferences; the second examined differences in TL ratings based on MBTI cognitive pairs.

**Differences in TL Ratings based on MBTI Dichotomous Preferences.** Separate t-tests were run to assess differences in self- and other-ratings of transformational leadership for leaders whose Myers-Briggs personality type preferences reflected a combination of Extraversion coupled with Thinking (ET), and Sensing coupled with Perceiving (SP). Companion Tests were also performed to examine the effect of the opposing dichotomous pairings, Introversion (I) with Feeling (IF) and Intuition (N) with Judging (NJ). Results of these analyses are presented below. Paired t-tests were performed to examine differences in the means for self- versus other-ratings of transformational leadership among leaders reporting each of these personality preference pairs. Following the presentation of each paired test, results of a companion analysis for the opposing personality preference pair is presented for comparison.

Table 14 shows the differences in self- and other-ratings of transformational leadership for leaders with personality preferences combining Extraversion (E) with Thinking (T). Leaders who reported preferences for E with T (ET) rated themselves significantly higher than their followers rated them on two of five dimensions of Transformational Leadership: Idealized Influence – Attributed, , t (53) =11.11, p < .01; and Inspirational Motivation, with t (53) = 6.7, p <.01. Given that the Idealized Influence

– Attributed scale assesses ascribed trust and respect, this finding suggests leaders with MBTI personality preferences combining E with T believe others trust and respect them more than they actually do. The similar finding for Inspirational Motivation suggests ET leaders also over-estimated the extent to which others experience their leadership as affording followers inspiration and motivation. There were no statistically significant differences between ET leaders' self- and other-ratings on the other three dimensions of transformational leadership.

Table 14

Differences in Self- and Other-ratings of Transformational Leadership for Leaders with MBTI preferences combining Extraversion with Thinking.

Self- vs. Other-	Leader (self-rat	ting)	Rater (other-ratings)		t	df	P
MBTI E with T							
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	n = 53		Score				
			n = 53				
Idealized	3.54	0.37	2.70	0.40	11.11	52	< .01
Influence							
(Attributed)							
Idealized	2.69	0.27	2.77	0.26	-1.53	52	.13
Influence							
(Behavior)							
Inspirational	2.84	0.26	2.63	0.17	6.70	52	< .01
Motivation							
Intellectual	2.58	0.17	2.59	0.23	-0.24	52	.81
Stimulation							
Individualized	2.84	0.25	2.68	0.41	2.46	52	< .05
Consideration							

The companion test of leaders' versus followers' ratings of transformational leadership among leaders with MBTI type preferences combining Introversion (I) with Feeling (F) is presented in Table 15. Leaders who reported a MBTI personality preferences that combined I with F (IF) rated themselves significantly less transformational than their followers rated them on four of five dimensions of transformational leadership: Idealized Influence - Attributed, t(33) = -4.26, p < .001; Idealized Influence -Behavior t(33) = -4.06, p < .001; Inspirational Motivation t(33) = -4.86, p < .001 and Intellectual Stimulation t(33) = -3.38, p < .01. Among IF leaders, there was no statistically significant difference between self- and other-ratings of Individualized Consideration (IC). This finding suggests followers experience IF leaders as being more idealized, inspirationally motivating and intellectually stimulating, than those leaders believe themselves to be.

Table 15. Differences in Self- and Other-ratings of Transformational Leadership amongLeaders with MBTI type preferences Introversion (I) with Feeling (F)

Self- vs. Other- ratings of TL for	Leader (self-ra	tting)	Rater (other-ratings)		t	df	P
MB111 with P	M	CD		CD			
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	n = 33		Score				
			n = 33_				
Idealized	2.43	0.26	2.71	0.46	-4.26	32	< .001
Influence							
(Attributed)							
Idealized	2.64	0.19	2.76	0.21	-4.06	32	<.001
Influence							
(Behavior)							
Inspirational	2.51	0.18	2.66	0.20	-4.86	32	<.001
Motivation							
Intellectual	2.70	0.28	2.77	0.22	-3.38	32	<.01
Stimulation							
Individualized	2.79	0.27	2.83	0.33	-1.03	32	.31
Consideration							

Table 16 shows the differences in self- and other-ratings of transformational leadership for leaders whose MBTI personality preferences included the combination of Sensing (S) and Perceiving (P). Leaders who reported MBTI personality preferences that combine S with P (SP) scored themselves significantly higher than followers rated them on one dimension of transformational leadership, Idealized Influence – Attributed *t* (38) =4.14, p < .01. The SP leaders rated themselves significantly lower than their followers rated them on another dimension of transformational leadership Individualized Consideration *t* (38) = 2.29, p < .05. Thus SP leaders' self-ratings were significantly higher than their external raters for Idealized Influence –Attributed, and significantly less than followers' ratings for Individual Consideration. There were no statistically significant difference between self- and other-ratings of SP leaders on the other three dimensions of Transformational Leadership: Idealized Influence - Behavior, *t* (38) = -2.67, p = .17, Inspirational Motivation *t* (38) = 1.18, p = .25, Intellectual Stimulation *t* (38) = -1.68 p = .10.

Table 16. Differences in Self- and Other-ratings of Transformational Leadership amongLeaders with MBTI type preferences Sensing (S) and Perceiving (P)

Self vs Other	Leader		Rater	Rater		df	P
Ratings of TL for							
MBTI S with P							
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	(n = 38)		Score				
			n = 38				
Idealized	3.09	0.68	2.63	0.45	4.14	37	<.01
Influence							
(Attributed)							
Idealized	2.67	0.26	2.79	0.19	-2.67	37	.17
Influence							
(Behavior)							
Inspirational	2.72	0.29	2.66	0.17	1.18	37	.25
Motivation							
Intellectual	2.66	0.22	2.73	0.23	-1.68	37	.10
Stimulation							
Individualized	2.83	0.25	2.66	0.38	2.29	37	< .05
Consideration							

Table 17 shows the differences in self- and other-ratings of transformational

leadership for leaders whose MBTI personality preferences included the combination of Intuition (N) and Judging (J). These Leaders score themselves significantly higher than their followers did on two of five dimensions of transformational leadership: Idealized Influence - Attributed, t (51) = 6.51, p <.001, and Inspirational Motivation t (51) = 3.58, p < .001. There were no significant differences between leaders' self-ratings and followers' other-ratings of NJ leaders on the other three subscales transformational leadership: Idealized Influence -Behavior, Intellectual Stimulation nor Individualized Consideration.

Self- vs Other-	Leader		Rater		Τ	df	P
rating of TL for							
MBTI N with J							
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	(n = 51)		Score				
Idealized	3.35	0.55	2.76	0.40	6.51	50	<.001
Influence							
(Attributed)							
Idealized	2.77	0.23	2.73	0.25	1.05	50	.29
Influence							
(Behavior)							
Inspirational	2.80	0.28	2.64	0.18	3.58	50	<.001
Motivation							
Intellectual	2.63	0.22	2.61	0.26	0.67	50	.50
Stimulation							
Individualized	2.84	0.32	2.75	0.36	1.67	50	.09
Consideration							

Table 17. Differences in Leadership Style by Intuition and Judging

**Differences in TL Ratings based on MBTI Cognitive Pairs.** Separate t-tests were also used to compare the self- and other-ratings of transformational leadership for leaders reporting Myers-Briggs type preferences combining Introversion (I) with Perceiving (P), and Extraversion (E) with Judging (J) across the five scales of the MLQ 5X instrument. Results are presented in Tables 20 & 21, respectively. Followers rated IP leaders significantly higher than leaders rated themselves on three of five dimensions of transformational leadership: Idealized Influence – Attributed, t (27) = -2.82, p > .005; Idealized Influence – Behavior, t (27) = -2.38, p = .01 and Inspirational Motivation, t (27) = -4.19 p < .001. (see Table 18).

Table 18. Differences in Self- and Other Ratings of Transformational Leadership for

TL Ratings for	Leader		Rater		t	df	Р
IP Leaders						v	
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	n = 27		Score				
Idealized	2.37	0.22	2.60	0.45	-2.82	26	.004
Influence							
(Attributed)							
Idealized	2.57	0.27	2.67	0.23	-2.38	26	.01
Influence							
(Behavior)							
Inspirational	2.47	0.22	2.60	0.20	-4.19	26	<.001
Motivation							
Intellectual	2.72	0.25	2.73	0.26	-0.25	26	.40.
Stimulation							
Individualized	2.82	0.16	2.81	0.30	0.13	26	.44
Consideration							

leaders with MBTI type preference combining Introversion (I) with Perceiving (P).

Conversely, followers rated EJ leaders significantly lower than leaders rated

themselves on three of five dimensions of transformational leadership: for Idealized

Influence – Attributed, t (66) = 11.94 p < .001; Inspirational Motivation, t (66) = 4.83 p <

.001; and Idealized Influence t (66) = 3.27p < .001. (see Table 19).

TL Ratings for	Leader		Rater	Rater		df	Р
EJ Leaders						Ĩ	
MLQ 5X	Mean Score	SD	Mean	SD			
Leadership Style	n = 66		Score				
Idealized	3.52	0.38	2.76	0.41	11.94	65	<.001
Influence							
(Attributed)							
Idealized	2.73	0.24	2.74	0.25	-0.24	65	.41
Influence							
(Behavior)							
Inspirational	2.83	0.31	2.63	0.17	4.83	65	<.001
Motivation							
Intellectual	2.53	0.19	2.57	0.24	-0.98	65	.16
Stimulation							
Individualized	2.87	0.27	2.69	0.38	3.27	65	<.001
Consideration							

Table 19. Differences in Self- and Other Ratings of Transformational Leadership for leaders with MBTI type preference combining Extraversion (E) with Judging (J)

# Differences in Self- vs. Other Ratings of Transformational Leadership based on MBTI

For purposes of this study, self-awareness was operationalized as the calculated difference between Leader self-ratings and follower other-ratings on each of the Transformational Leadership subscales. This "discrepancy score" was calculated to operationalize leader's self-awareness on each of the TL subscales, then analyzed to assess differences based on the leader's MBTI cognitive pairs. To assess the effect of self-awareness on ratings of transformational leadership, analysis of variance was used to test for differences among the calculated discrepancy scores for MBTI cognitive pairs on each TL subscale. Results reveal which dimensions of transformational leadership reflected significant differences in self vs other discrepancy scores based on MBTI preferences. Where significant results were obtained, post hoc analysis was used to identify which MBTI cognitive pairs accounted for the effect.

Separate analysis of variance (ANOVA) tests were conducted on the calculated differences between leaders' self-ratings and followers' other-ratings on each of the five transformational leadership subscales. This "Leader-Follower discrepancy score" provided a measure of the amount of agreement (similarity) or disagreement (dissimilarity) between how leaders rated themselves, relative to how their followers rated them, on each of the 5 dimensions of transformational leadership assessed by the MLQ 5X. Results of these one-way ANOVAs of Leader-Rater discrepancy scores are presented in Table 18. Significant ANOVA results were found on one of the five dimensions of transformational leadership examined: Intellectual Stimulation, F (3,160) = 3.92, p < .01 (see Table 20).

Table 20. Summary of Self-Awareness Discrepancy Score ANOVAs for TransformationalLeadership Subscales based on Cognitive Pairs

Leader-Rater	F-statistic	<i>P</i> -value	Source of	SS	df			
Discrepancy			Variation					
Idealized	1.28	.284	Post-hoc analy	sis not requi	red			
Influence								
(Attributed)								
Idealized	2.60	.054	Post-hoc analy	sis not requi	red			
Influence								
(Behavior)								
Inspirational	2.12	.10	Post-hoc analy	Post-hoc analysis not required				
Motivation								
Intellectual	3.92	.01	Between	0.79	3			
Stimulation			Groups					
			Within	10.78	160			
			Groups					
			Total	11.58	163			
Individualized	0.51	.67	Post-hoc analysis not required					
Consideration								

Tukey's HSD post hoc analysis was performed on the one significant ANOVA for Intellectual Stimulation, to locate the MBTI cognitive pairs that accounted for the significance of that test. Using Tukey's Honestly Significant Difference (HSD), the source of significant difference in Leader-Rater discrepancy scores was localized to leaders with Myers-Briggs type preferences NT vs SF ( $.176 \pm .146$  pts, p = .011). Since the effect was positive, these results indicate SF leaders and their followers were significantly more in agreement in their ratings of intellectual stimulation, than were NT leaders and their followers on the intellectual stimulation subscale of transformational leadership. Because self-awareness in this study has been operationalized as concordance between self- and other ratings of transformational leadership, the finding of significant difference in the discrepancy scores for NT leaders compared to SF leaders suggests the latter are more self-aware of the extent to which they are exhibiting transformational leadership practices reflected in the Intellectual Stimulation subscale of the MLQ 5X. Said differently, leaders with a cognitive preference for SF were found to be more in more self-aware than NT leaders with respect to how their followers view their practice of Intellectual Stimulation.

#### Interaction of Self- and Other- Ratings of Transformational Leadership

A two-way ANOVA with replication was run to test for an interaction effect of self- and other ratings of transformational leadership across all five scales of the MLQ 5X. A significant interaction was obtained, F (4, 1630) = 27.14, p < .001 (see Table 21).

An interaction plot was created to locate the source of interaction (see Figure 2). An interaction occurs when the value of one variable depends on the value of another variable. The interaction effect in this case reflects when differences between leader and follower ratings of transformational leadership depend upon which dimension of transformational leadership is being assessed, irrespective of personality. Interaction

effects can be identified in Figure 2 by observing which lines connecting self- and otherratings of transformational leadership cross (have different slopes). The lines that do not cross (are parallel) reflect dimensions of transformational leadership on which ratings do not depend on whether the self or followers rated the behavior.

Self vs. Rater				
TL ANOVA				
Source of	SS	Df	F	p-value
Variation				
Leader vs	4.28	1	38.16	<.001
Raters				
TL Subscales	17.25	4	38.44	<.001
Interaction	12.18	4	27.14	<.001
Within	182.84	1630		
Total **	216.54	1639		

Table 21. Interaction of Self- and Other Ratings of Transformational Leadership

Figure 2. Interaction Effect plot



Table 22 was created to summarize the interaction effect observe in Figure 2. The table identifies which lines in Figure 2 either cross or would cross if extrapolated in either direction, reflecting an interaction between Leaders and Raters assessment of TL on the five subscales of the MLQ 5X. The plot lines that run parallel indicate that no interaction effect for self- versus other-ratings of transformational leadership is present for Individualized Consideration (IC) and both Inspirational Motivation (IM). Likewise no interaction effect was observed between Idealized Influence – Behavior (II-B), Intellectual Stimulation (IS), as these lines are also parallel. Interactions were observed between the differing slopes of Idealized Influence – Attributed (II-A) relative to all the other subscales of Transformational Leadership, and between Idealized Influence -Behavior (II-B) and Idealized Influence – Attributed (II-A), Inspirational Motivation (IM) and Individualized Consideration (IC), but not Intellectual Stimulation (IS). Additionally, Inspirational Motivation (IM) interacted with II-A, between Idealized Influence – Behavior (II-B), and Intellectual Stimulation (IS), but not Individualized Consideration (IC). Finally, Individualized Consideration can be observed to interact with and Idealized Influence – Attributed (II-A), Idealized Influence – Behavior (II-B), Intellectual Stimulation (IS), but not Inspirational Motivation (IM) (See Table 24).

Table 22. Summary of Intere-	action Effect Plotted	in Figure 2 for S	elf- versus Other-
ratings of Transformational	Leadership. P numb	per displayed, or i	n.s. if not significant.

	Interaction effect observed									
	IIA	IIB	IM	IS	IC					
IIA										
IIB	Yes									
IM	No	Yes								
IS	No	No	Yes							
IC	YES	Yes	No	Yes						

Tukey's HSD post hoc analysis was run to identify the source(s) of significant difference between leader's and follower's ratings of TL that account for these interaction effects. Table 23 summarizes the results of this post hoc analysis of significant differences among aggregate Leader and Rater scores on the five Transformational Leadership subscales. Results of this post hoc analysis identified that there was a significant difference between Leaders and Raters scores overall (p < .001). In addition, there were significant differences overall between the combined leader and follower ratings of Idealized Influence – Attributed compared to each of the other four dimensions of TL: Idealized Influence - Behavior, Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individualized Consideration (IC), in each case at the p < .001 level. The combined leader and follower ratings for Idealized Influence – Behavior was also significantly different from the combined ratings of leaders and followers for Intellectual Stimulation (IS) (p < .01) and Individualized Consideration (IC) (p < .05), but not Inspirational Motivation (p = .311). The overall scores for Inspirational Motivation were also significantly different from Individualized Consideration (IC) (p < .001), but not from Intellectual Stimulation (IS) (p = .468). Finally, Intellectual Stimulation overall was significantly different from Individualized Consideration (IC) (p < .001) (see Table 23).

Table 23. Summary of Significant Differences among Leaders and Raters' Combined Scores on Transformational Leadership Subscales. p number displayed, or n.s. if not significant

Overall Interaction of Combined Leaders and Raters on TL subscale	IIA	IIB	IM	IS	IC
IIA					
IIB	<.001				
IM	<.001	n.s.			
IS	<.001	<.01	n.s.		
IC	<.001	<.05	<.001	< .001	

With respect to the disaggregated scores of Leaders and Raters, post hoc analysis identified significant difference between Leaders' ratings of Idealized Influence -Attributed (II-A) and both Leaders' and Raters' ratings on each of the other four dimensions of TL: Idealized Influence – Behavior, Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individualized Consideration (IC), at the p < .001 level. Leader's ratings of Idealized Influence - Behavior (II-B) were also significantly different from the disaggregated ratings of Leaders for Individualized Consideration (IC) (p < p.001), but no other disaggregated ratings of leaders or followers on the other TL subscales. Leaders' ratings of Inspirational Motivation (IM) were also significantly different from Leaders' ratings of Individualized Consideration (IC) (p < .01), but no other disaggregated ratings of leaders or followers on the other TL subscales. Leaders' ratings of Intellectual Stimulation (IS) were significantly different from Leaders' ratings of Individualized Consideration (IC) (p < .01), and also Raters' (followers') ratings of Idealized Influence – Behavior (p < .01). Leaders' ratings of Individualized Consideration were also significantly different from Raters' (followers') ratings of both Inspirational Motivation (IM) (p < .001) and Intellectual Stimulation (IS) (p < .001). Followers' (Raters) ratings for Idealized Influence – Attributed (II-A) were not significantly different from Raters' ratings on any of the other TL subscales. Followers' (Raters) ratings of Idealized Influence – Behavior (II-B) were also significantly different from followers' (Raters) ratings of Inspirational Motivation (IM) (p < .05), and are summarized in Table 24.

			Lea	ders				R	aters		
		IIA	IIB	IM	IS	IC	IIA	IIB	IM	IS	IC
	IIA										
Leaders	IIB	<.001									
	IM	<.001	n.s.								
	IS	<.001	n.s.	n.s.							
	IC	<.001	<.001	<.01	<.01						
	IIA	<.001	n.s.	n.s.	n.s.	n.s.					
	IIB	<.001	n.s.	n.s.	<.01	n.s.	n.s.				
Raters	IM	<.001	n.s.	n.s.	n.s.	<.001	n.s.	<.05			
	IS	<.001	n.s.	n.s.	n.s.	<.001	n.s.	n.s.	n.s.		
	IC	<.001	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	

Table 24. Summary of Significant Disaggregated scores among Leaders and Raters' Combined Scores on Transformational Leadership MLQ 5X Subscales. P number displayed, or n.s if not significant.

# Summary

The purpose of this study was to examine the relationship between Myers-Briggs personality type preferences and transformational leadership as rated by self (Leader) and followers (Raters). Differences between self and other ratings were explores as a potential indicator of self-awareness. This chapter presented an analysis of the data. Chapter 5 will interpret the findings relative to stated hypotheses, summarizes the conclusions derived from the study, consider implications of the findings, and make recommendations for further research.

# **CHAPTER 5. CONCLUSIONS AND IMPLICATIONS**

This chapter presents an interpretation of research findings pertaining to the research question and each stated hypothesis, followed by a summary of these conclusions and the results obtained. Following this implications of the findings are discussed, including their potential meaning and significance. The limitations of the study, including unresolved problems and weaknesses identified is also stated. The chapter concludes with suggestions for further research.

### **Interpretation of Hypotheses and Research Questions**

The overarching research question guiding this study was stated as, "What is the differential effect of Jungian personality preferences on self-awareness operationalized as the difference between self- and other-ratings of transformational leadership behaviors?" Seven hypotheses were tested to assess this research question. Findings pertaining to each of the stated research questions will be presented:

**Hypothesis 1**. The first hypotheses compares the self- and other- ratings of transformational leadership for leaders preferring one of two combinations of MBTI type preferences: Extroversion (E) with Thinking (T) and Sensing (S) with Perceiving (P). It was anticipated that leaders who preferred Extraversion together with Thinking would have statistically significant differences between self and other ratings of transformational leadership. Conversely, it was anticipated that leaders who preferred Sensing together with Perceiving would have no significant differences between self and other ratings of TL.

H1a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type

# preferences of Extraversion and Thinking

Based on results of data analysis presented in chapter 4, H1a was partially supported. Significant differences were observed between leaders with Myers-Briggs type preferences of E with T on three of the five MLQ5X subscales tested: Idealized Influence - Attributed (II-A), Inspirational Motivation (IM), and Individualized Consideration (IC). Leaders rated themselves higher than followers on both II-A and IM; leaders rated themselves lower than followers on IC. No significant differences were observed for ET leaders on the Idealized Influence - Behavior or Intellectual Stimulation subscales.

H1b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with a Myers-Briggs type preference of Sensing and Perceiving.

Based on results of data analysis presented in chapter 4, H1b was partially supported. Significant differences were observed between leaders with Myers-Briggs type preferences of S with P on two of the five MLQ5X subscales tested: Idealized Influence -Attributed (II-A) and Individualized Consideration (IC). Leaders rated themselves higher than followers on both II-A and IC. No significant differences were observed for SP leaders on the Idealized Influence – Behavior, Inspirational Motivation, or Intellectual Stimulation subscales.

Overall Hypothesis 1 was partially accepted.

**Hypothesis 2**. The second hypotheses compares the self- and other- ratings of transformational leadership for leaders preferring one of four cognitive pairs assessed by the MBTI: NF, NT, ST and SF.

H2a. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences NF and NT.

Based on results of data analysis presented in chapter 4, H2a was not supported. No significant differences were observed between self and other ratings of transformational leadership practices among leaders with Myers-Briggs Cognitive style preferences of NF and NT.

H2b. There will be a significant difference between self and other ratings of transformational leadership practices among leaders with Myers-Briggs cognitive style preferences ST and SF.

Based on results of data analysis presented in chapter 4, H2b was not supported. No significant differences were observed between self and other ratings of transformational leadership practices among leaders with Myers-Briggs Cognitive style preferences of ST and SF.

Overall Hypothesis 2 was rejected.

**Hypothesis 3**. The third hypotheses compares the self- and other- ratings of transformational leadership for leaders preferring one of two combinations of MBTI type preferences: Introversion (I) with Perceiving (P) and Extroversion (E) with Judging (J). It was anticipated that leaders who preferred Introversion together with Perceiving would rate themselves lower than their followers would rate them on all Transformational Leadership subscales. Conversely, it was anticipated that leaders who preferred Extroversion with Judging would rate themselves higher than their followers then the followers the followers then the followers the followers the followers the followers the followers the followers the follower

H3a. There will be significantly more transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Introversion and Perceiving.

Based on results of data analysis presented in chapter 4, H3a was partially supported. Significant differences were observed between leaders with Myers-Briggs type preferences of I with P on three of the five MLQ5X subscales tested: Idealized Influence - Attributed (II-A), Idealized Influence – Behavior (II-B), and Inspirational Motivation (IM). Leaders rated themselves higher than followers on all three TL of these TL dimensions: II-A, II-B and IM. No significant differences were observed for SP leaders on the Intellectual Stimulation (IS) or Individualized Consideration (IC) subscales.

H3b. There will be significantly less transformational leadership practices behavior reported by raters among leaders with Myers-Briggs type preferences of Extraversion and Judging.

Based on results of data analysis presented in chapter 4, H3b was partially supported. Significant differences were observed between leaders with Myers-Briggs type preferences of E with J on three of the five MLQ5X subscales tested: Idealized Influence - Attributed (II-A), Inspirational Motivation (IM), and Individualized Consideration (IC). Leaders rated themselves higher than followers on all three TL of these TL dimensions: II-A, IM, and IC. No significant differences were observed for SP leaders on the Idealized Influence – Behavior (II-B) and Intellectual Stimulation (IS) subscales.

Overall Hypothesis 3 was partially accepted.

**Hypothesis 4**. The fourth hypotheses assesses the interaction between self- and otherratings of transformational leadership irrespective of personality preferences.

H4a. There will be a significant interaction effect between self vs. other perceptions of leadership behaviors on all four dimensions of transformational leadership: Idealized Influence (II), Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC).

Based on results of data analysis presented in chapter 4, H4 was supported. A significant overall interaction effect was obtained F (4, 1630) = 27.14, p < .001. Post hoc analysis located the source of this effect primarily to the significant differences between Leaders and Raters on Idealized Influence – Attributed. A plot of all five slope lines representing the difference between leader and follower ratings on all MLQ 5X subscales illustrated the interaction of Idealized Influence – Attributed with all the other four dimensions of Transformational Leadership. Compared to raters, leaders rate themselves significantly higher than follower on this dimension of TL, regardless of personality preferences. The lines for IM and IC also reflected higher leader ratings than follower ratings, but were the differences were less steep and were virtually parallel to each other. The slope lines for II-B and IS were also essentially parallel to each other, but reflected higher follower ratings than leader self-ratings.

Overall Hypothesis 4 was accepted, based primarily on the effect of Idealized Influence – Attributed (II-A).

## **Summary of the Conclusions**

The objective of this study was to empirically examine what relationship exists

between leaders' Myers-Briggs personality type profiles, and their transformational leadership practices, comparing self- and follower-ratings as an operationalization of selfawareness.

The effect of personality type preferences on transformational leader was examined to determine whether self- and other-ratings differed on each of the five subscales of the MLQ 5X: Idealized Influence (Attributed and Behavior), Individual Consideration, Intellectual Stimulation and Inspirational Motivation based on Myers-Briggs personality type preferences: (Extraversion (E) vs Introversion (I), Sensing (S) vs Intuition (N), Thinking (T) vs Feeling (F), and Judging (J) vs Perceiving (P)). A series of t-tests were conducted that compared the MLQ 5X scores of the dichotomous personality type pairs being examined (E/I, S/N, T/F and J/P) and then the self and other scores were examined to see if there were statistically significant differences based on who was providing the feedback. A small number of statistically significant differences were found, but not always in the predicted direction.

Leaders who preferred Extraversion (E) over Introversion (I) rated themselves significantly more transformational than their raters for Idealized Influence- Attributed (p < .01) and Inspirational Motivation (p < .01). This suggests these leaders thought that their followers trust and respect them more than they actually do (IIA), and also that these Leaders may over-estimate how much they can inspire their followers to perform beyond expectation (IM). The other-raters of Extraverted leaders observed significantly more Idealized Influence – Behavior in their leaders (p < .01) than they themselves reported. Thus extroverted leaders over estimated themselves relative to their followers on two dimensions of transformational leadership related to trust/respect and motivation, and

under estimated themselves with respect to demonstrating higher moral standards, values, beliefs and principles. Given that Transformational Leaders purportedly act as strong role models for their followers (Avolio, 1994, Yukl, 1998), this mixed outcome is unexpected, and suggests that some aspects of transformational leadership may be more discernable by followers than others. The finding that extraverts are viewed themselves as more transformational than their followers see them on two dimensions of TL is consistent with the previous work by Van Velsor & Fleenor (1997) who found that extraverts rate themselves higher than introverts on a wide variety of leadership skills and behaviors, and Brandt (2016) who found that Extraverts considered themselves to be significantly more transformational than Introverts (p < .001), and that observers or raters often differed in their view. These findings also align with Roush and Yammarino (1997) who reported Extraverts have a tendency to over-estimate their transformational leadership profile.

There were no other significant differences in the self- versus other ratings of transformational leadership based on leaders' dichotomous pair preferences on the MBTI. This outcome contradicts the earlier Roush and Atwater (1992) study that found leaders with a preference for feeling were rated more transformational on three out of the four scales by their raters. The Roush and Atwater study was conducted at the U.S. Naval Academy; the sample consisted of n= 90 midshipmen, of which n = 83 (92%) were male, and n = 7 (8%) were female. The population used for this study with n = 151 male (92%) and n = 13 female (8%), is larger but identical in gender composition. The midshipmen who preferred Feeling (25%) over Thinking (75%) in the Roush and Atwater study compares to the more balanced split of feeling (79, 48%) and thinking (85, 52%) leaders

among respondent in this study, rendering the results reported here potentially more generalizable to the general population.

On the other hand, the lack of significant differences found among the dichotomous MBTI personality preferences agrees with the Brown and Reilly (2009) study, who reported results of a study of U.S. Technology Manufacturers. Their data found no relationship between follower assessments of transformational leadership and leader personality as measured by the MBTI, but they did find that leaders overall rated themselves to be more transformational than those that reported to them. Indeed Walck (1992) posited that the MBTI might be describing management behaviors, or how managers want to be, rather than how the other-raters actually perceive them. This selfserving bias was also observed in the present study when considering the composite MLQ score for TL. Buy when results were analyzed but subscales there was a more even split with respect to the differences between leaders and follower's ratings, with followers perceiving less Idealized Influence – Attributed, Inspirational Motivation and Individualized Consideration (consistent with previously reported findings), but more Idealized Influence – Behavior and Intellectual Stimulation than leaders perceived in themselves overall.

When differences in leader and follower ratings were examined based on personality preferences that combined more than one dimension of the MBTI, Leaders who preferred both E and T rated themselves significantly higher than their followers for two TL subscales, Idealized Influence – Attributed t (53) =11.11, p < .01, and Inspirational Motivation t (53) = 6.7, p < .01, mirroring the comparison of E vs I means. This finding suggest that like E leaders overall, ET leaders also overestimate the extent to

which they embody the trust and respect associated with Idealized Influence-Attributed, and the capacity to motivate followers to perform beyond expectations, characteristic of inspirational motivation. Walck (1997) reported finding the same effect for ET leaders on a different dimension of TL, finding leaders whose MBTI preferences included the ET functional pair over-stated their Idealized Consideration, t (53) = 2.46, p<.02, which might reflect a tendency for extroverts to be more rewarding and appreciative of other peoples' opinions (Myers and Myers, 1995).

In examining leaders with the opposing preferences of I and F, followers were found to perceive significantly more transformational leadership on the Idealized Influence (Attributed) to p < .001, Idealized Influence - Behavior to p < .001, Inspirational Motivation to p < .001 and Intellectual Stimulation to p < .001 subscales than leaders reported exhibiting. Whereas ET leaders had a tendency to significantly overstate aspects of their transformational leadership, the IF leaders significantly underestimated their transformational leadership capacity relative to their followers' perceptions, on a wider range of TL subscales.

The second research question directly assessed the effect of leaders' self-awareness of TL across all five subscales of the MLQ 5X, but analyzing differences among the calculated difference between leader and follower ratings for each of the MBTI Cognitive Pairs: NT, NF, ST and SF. The resulting analysis found significance on only one TL subscale, for Intellectual Stimulation, F (3,160) = 3.92, p < .01. However post hoc analysis revealed this effect was limited to the difference between leaders with the Cognitive Preference NT vs SF (.176 ± .146 pts, p = .011).

Research question 3 examined differences between leaders and followers ratings for leaders that prefer Introversion and Perception (IP) or Extroversion and Judging (EJ). The analysis for IP leaders found followers rated leaders higher on the TL subscales for Inspirational Motivation and Idealized Influence –Behavior. This finding is consistent with Walck's (1997) assertion that perceivers' flexibility, creativity, and openness to change may enhance other's perception of their capacity for transformational leadership.

The analysis EJ Leaders found leaders overestimated their Transformational Leadership on three subscales: Idealized Influence- Attributed, Inspirational Motivation and Individualized Consideration. Myers (1988) characterized judgers as drawing energy from achievement, and they value the closure this brings (Myers, 1998). These leaders may be well suited to the environment where participants in this study are employed, an industrial organization that recently became publically traded, and values time-based decisions, and frequently challenging timelines. With respect to Idealized Inspiration -Attributed Raters scored EJ leaders lower than the Leader self-assessment, suggesting they may be less trusted and respected than they perceive themselves to be. Myers (1998) observed that leaders with an Extraverted, Judging preference tend to make decisions about the outside world quickly and with great certainty. It could be posited this may have an effect on ratings of II-A among EJ leaders. The finding that EJ leaders significantly over-rated their own Intellectual Stimulation compared to their raters, aligns with Bass and Yammarino's (1989) description of Transformational Leadership as exercising power that is consensual and facilitative, and manifest thru other people, not over other people. Finally, EJ leaders' tendency to overrate their Individualized Consideration may reflect a conflict between their tendency to be social and draw energy

from being with others (Hautala, 2005), and seeking closure to decide matters themselves, rather than allow their followers to feel self-actualized or engaged. H4a. There will be a significant interaction effect between self vs. other perceptions of leadership behaviors on all four dimensions of transformational leadership: Idealized Influence (IIA, IIB), Inspirational Motivation (IM), Intellectual Stimulation (IS) and Individual Consideration (IC).

Research question 4 examined the interaction effect between the Leader and the Raters' scores across the MLQ5X scales, irrespective of personality preferences. A significant interaction effect was observed, with F (4, 1630) = 27.14, p < .001, which supports earlier studies by Avolio & Bass (2004) who also reported significant interaction effect.

# **Implications of the Findings**

When considering the implications of this study, it is useful to keep in mind that for leaders to be transformational, they need to have the ability to articulate and focus attention on a clear vision of the future, and derive charisma, or energy from interacting with followers, whilst attending to the employees' individual needs. (Walck, 1997). In addition, they need to be able to transform followers to transcend their own self-interest for the sake of collective purpose, whilst managing increasing complexity, change and compressing timelines (Walck, 1997).

The most consistent finding from previous studies on leadership skills and the MBTI is that Extraverts (E) rate themselves higher than Introverts (I) on a wide variety of leadership skills and behaviors (Van Velsor & Fleenor, 1997, Hautala, 2013), and the present study is no different. While results of the present study are mixed, and fairly limited, a number of findings do inform the question of whether personality has a differential effect on self- and other=ratings of transformational leadership:

- There was no overall tendency for leaders to over rate their transformational leadership across all subscale of the MLQ.
- There were few statistically significant differences between leaders and raters of TL based on any single personality preference except extraversion.
- The differential effect of extraversion on ratings of transformational leadership was also observed when combined with Thinking.
- 4) The effect of MBTI cognitive pairs on differential ratings of TL was limited to ratings of SF leaders who were significantly more in agreement than the raters of NT leaders on the Intellectual Stimulation subscale.

## **Study Limitations**

There are a number of limitations to this study. The first major limitation is that the MLQ 5X data is both self-reported, and observer rated. This could be subject to bias. The information was gathered online in early 2018 from employees participating in a leadership development program within their organization. The data were collected by an external organization, with identifiers that permitted individual feedback to leader participants. The leaders were allowed to nominate their raters, and the numbers of raters varied from 3 to 31, which might impact the quality and depth of the feedback. These conditions could have introduced self-serving and acquiescent bias in both selfand other-ratings.

Self-perception bias might be also be a limiting factor of this study. The MBTI is a self-report instrument, and the leaders verified their type according to the Myers-Briggs

procedures, there could be self-perception bias. Fitzgerald (1997) noted that within many organizations, the environment of the organization, or the dominant type of the organization interferes with the natural inclinations and preferred processes of an individual. Walck (1997) observed that managers of all types value the organizational culture, which he characterized as STJ, and managers might modify their type for better fit.

Gender is a source of bias in this study, due to the preponderance of male leaders in the sample. Insufficient data were obtained to analyze the effect of gender on the hypotheses tested, and the paucity of females in the sample prohibit the extrapolation of results to the general population of leaders as a whole, or female leaders in particular.

A final limitation to this study is due to its design; a convenience sample was used, and as there is no temporal component to the design of the experiment, the results described are limited to the documentation of a statistical phenomenon, thus producing associative and not causal knowledge from a specific point in time.

## **Suggestion for Future Research**

Further study is recommended to extend this study of the differential effects of personality on transformational leadership. Replication is needed to address the gender limitations noted. Also needed are studies that extend this line of research to examine the relationship between personality preferences and the outcomes of transformational leadership, such as assessments of leadership effectiveness. The knowledge generated by such studies could enhance the practice of transformational leadership by promote selfunderstanding and development of leaders' based on self-assessment of their personality preferences. This is consistent with the fact that the Myers-Briggs type indicator is
founded on a theory of personality that defines maturation as the equal development of both dominant and inferior functions. Understanding the relationship between each of these personality dimensions can afford leaders both the insight and motivation to target non-dominant or inferior functions for enhancement.

Studies on the propensity for change, as a function of a leaders' MBTI profile could further this understanding and could provide valuable insight. Conducting a longitudinal study might offer insight into the actual effects of personality on the decisions that inform transformational leadership behaviors, and how or if developmental change reduces the differential effects of personality preferences on self- versus otherratings of TL. Qualitative studies of transformational leaders could also offer insight into how each MBTI type enacts each of the five dimensions assessed by the MLQ 5X, as well as how leadership development can best be tailored to target different dimensions of a leader's MLQ profile.

### Conclusion

The objective of this study was to examine the relationship between Myers-Briggs personality profiles and Transformational Leadership, and how this relationship differs by self- and other raters. Only one statistically significant difference was found between leaders' self-ratings and followers' other-ratings on a single dimension of MBTI personality preferences (Extraversion). Similarly, only the cognitive pair ST was found to have a consistent differential effect on self- versus other-ratings of transformational leadership. An interaction effect was observed in the data analyzed for this study suggesting some dimensions of transformational leadership may be more subject to differential self- and other-perceptions irrespective of personality type preferences.

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### SELF-AWARENESS, PERSONALITY, LEADERSHIP

### Appendix A – MLQ Instrument



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To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

#### Multifactor Leadership Questionnaire

The three sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

# Citation of the instrument must include the applicable copyright statement listed below. Sample Items:

As a leader ....

I talk optimistically about the future. I spend time teaching and coaching. I avoid making decisions.

The person I am rating ....

Talks optimistically about the future. Spends time teaching and coaching. Avoids making decisions

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Sincerely.

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### SELF-AWARENESS, PERSONALITY, LEADERSHIP

## Appendix B- MBTI Instrument (Sample screen)

Which response comes closer to describing how you usually feel or act?

### 1. When you go somewhere for the day, would you rather

plan what you will do and when, or

just go?

### 2. If you were a teacher, would you rather teach

fact courses, or

courses involving theory?

### 3. Are you usually

a "good mixer," or

rather quiet and reserved?

### 4. Do you prefer to

arrange dates, parties, etc., well in advance, or

be free to do whatever looks like fun when the time comes?

### 5. Do you usually get along better with

imaginative people, or

realistic people?

