PERSONALITY AND MILITARY LEADERSHIP

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Abstract— The purpose of this review is to examine the research literature on the relationship between personality and leadership, specifically in a military context. It begins by looking at the association between personality and job performance in general. This analysis is undertaken across several occupations, including security-related groups, such as police and the military. Following this, there is a general discussion of theories of leadership and approaches to measuring leadership. Trait approaches to leadership are then reviewed, with the importance of the context of the situation being affirmed. Next, two major personality theories (the five-factor model and the theory of personality types) are examined for their relationship to leadership. The evolving role of military leadership is discussed in terms of the transition from traditional national militaries to multinational peacekeeping forces. Both descriptive and correlational studies reveal relationships between personality and leadership in a military context. These results, however, are equivocal with little consistency across various studies in terms of which personality variables are better at predicting leadership performance. Other variables are considered in terms of their potential for future research on leadership, including: honesty and integrity, stress tolerance, and emotional intelligence. Two broad approaches to emotional intelligence are discussed: the ability and mixed (ability & personality) models. Although there is current theorizing on the relationship between emotional intelligence and leadership, further empirical research requires the availability of appropriate measures of emotional intelligence, and some initial tools have been developed. Some of the limitations of the research literature on personality and leadership are identified, including: lack of job analyses, ethical issues, cultural differences, and psychometric problems. Several suggestions and recommendations are made regarding the use of personality information in the Canadian Forces for both officer selection and development.

TABLE OF CONTENTS

A. OVERVIEW

The purpose of this project was to investigate the general relationship between personality and leadership, particularly in a military context. The authors examined the research literature on the association between personality and leadership with a specific focus on these variables in military, police, and corrections organizations. In order to summarize the results of some studies, meta-analyses were conducted to evaluate the relative effect sizes of the correlations among personality variables and leadership effectiveness. The literature on personality and leadership was reviewed with a concentration on a variety of measures of personality including the Five-Factor Model and the Myers-Briggs Type Indicator (MBTI). As well, the emerging literature on emotional intelligence and leadership was reviewed, and the overlap between personality and cognitive variables in terms of their relevance to effective leadership was discussed.

Literature Search

The authors focused on the most recent studies relevant to peace and security organizations including the military, the police, and corrections. A great deal of the literature and research regarding leadership and personality falls under the broader rubric of business and management. As such, a broader search of the literature was conducted across a number of resources including PsycLit, ERIC, the Social Sciences Index, Business Periodicals Online, ABI/Inform Global, CARL: UnCover, as well as a comprehensive search of the World Wide Web. PsycLit is an index of the international literature of psychology and material relevant to psychology in the related disciplines of education, medicine, business, sociology, and psychiatry. ERIC is a database of literature relevant to education and training, and includes unpublished literature such as conference papers and government reports. The Social Sciences Index catalogues more than 342 periodicals in the subject areas of law, minority studies, planning and public administration, political science, psychology, social work, public welfare, sociology, urban studies, and women's studies. ABI Inform Global and the Business Periodicals Online are both indices of business management and human resource journals. Uncover (from the Colorado Alliance of Research Libraries: CARL) is an index of over 18,000 multidisciplinary journals. A literature search on PsychInfo© revealed 86 articles on the specific topic of personality and leadership published from 1984 to present. Well over 1000 articles were published during the same period on personality, emotional intelligence, job performance, and management.

Areas Of Investigation

The literature on personality and leadership was divided into two major topics. The first area of investigation explored the relationship between personality and job performance in general. The second topic focused more specifically on the relationship between personality and leadership styles. It should be recognized at the outset that, similar to personality, there are individual differences in management styles, and furthermore that there is no single way to be an effective manager or leader. For instance, Kirton (1988) described an adaptor management style that is more effective in times of fiscal restraint, and an innovator management style that is more effective during times of organizational change. This is why researchers some have advocated for a multidimensional approach to research on managerial performance (e.g., Tett, Guterman, Bleier & Murphy, 2000).

Several personality variables have been linked to effective leadership, particularly in a military setting, including: Conscientiousness/Accountability, Integrity/Honesty, and Stress Tolerance, among others. Conscientiousness is a common personality factor that has shown a strong relationship to job performance in general, and more specifically to managerial performance (e.g., Robertson, Baron, Gibbons, MacIver & Nyfield, 2000). In turn, this factor is derived from one of the more prominent, contemporary theories of personality, the Five-Factor Model (Costa & McCrae, 1992).

Assessment of integrity in potential leaders overlaps with some of the research on ethics and leadership (e.g., Craig & Gustafson, 1998). This in turn may have important implications in the Canadian military context. Although integrity and honesty are potentially valuable in the prediction of effective leadership, this has been a controversial area of psychological research, since deception is often employed in assessing these particular dimensions of personality.

Given the nature of military operations, and particularly the prominent role that Canada plays in peace-keeping (and peace-making), the ability to cope with demanding situations (i.e., stress tolerance) would seem to be important for leaders, and indeed for all personnel in the Canadian Forces (CF). There is strong support for the notion that coping with stressful situations develops through practical experience, as documented in the research literature on stress inoculation (e.g., Deikis, 1983; Smith, 1986). In addition, however, there is evidence that some individuals are less susceptible to the adverse impact of stress (e.g., Rushall, 1990; Swanson, Blount & Bruno, 1990). In turn, this may have important implications for both effective leadership and more expedient recovery of military personnel from post-traumatic stress disorder (PTSD).

There has been a great deal of recent interest in a variable called emotional intelligence (Goleman, 1995). This variable is unique in that it overlaps both the personality and cognitive domains in psychology. It should be noted that this variable is very similar to another concept that has a longer history in psychology, the variable of social intelligence. It would seem that emotional intelligence and such related concepts would play an important role in understanding and predicting effective leadership, given that it largely involves the management of other people, especially in a military context. The literature on emotional intelligence is burgeoning; however some of the new assessment tools in this area may not have been properly validated. It was not the intention to provide an exhaustive review of this topic, since it is large enough that it can be covered in its own right. It was considered appropriate, however, to include in this review some discussion of the overlap between personality and cognitive variables in terms of their relevance to effective leadership.

The identification of personality variables for predicting effective leadership may have important implications for both the assessment and selection of potential leaders in the military, as well as for the leadership development of CF personnel. As was previously stated, there are many different approaches to being an effective leader. Through the development of a self-awareness of an individual's own leadership style, it may be possible to provide a leader with the personal tools for handling a given situation more effectively. Indeed, it may be that flexibility in adapting one's own leadership style to a given situation may itself be predictive of more effective leadership overall (e.g., Zaccaro, Foti, & Kenny, 1991).

Meta-Analysis Methodology

In order to summarize some studies in which an extensive number of correlations are reported, meta-analyses were undertaken. This helped to evaluate the average effect sizes for the relationships between personality variables and leadership. The specific approach that was employed followed the procedures for averaging correlations as described by Hunter, Schmidt, and Jackson (1982). Both un-corrected and corrected correlations were reported, where appropriate information for correcting statistical artifacts was available. The *manifest* correlations between variables can be attenuated (lessened) by several measurement problems, under-representing the actual *latent* relationships (MacLennan, 1988). Some of these problems include: unreliable measures, restriction of range, and extreme base-rates, among other factors. Corrections to correlations were applied for these factors, when the necessary statistical information was present in published research articles. By employing meta-analysis to average effect sizes (correlations), it was hoped that the variables with the strongest relationships would be revealed, which in turn could provide direction for further research.

The procedure utilized to average correlations was to convert them into standardized Z-scores, using the well-known Fisher r-to-Z transformation (see equation 1). [The signs of the correlations were ignored for these analyses because the direction of effects could not be expected to be consistent across the different variables]. These Z-scores were then averaged (weighting for number of cases; see equation 2). The averaged Z-score was then converted back into an average correlation using the reverse Fisher Z-to-r transformation (equation 3). The standard error to test the significance of the average Z-score (and hence the average correlation) is given by equation 4. A chi-squared (χ^2) goodness-of-fit test was also employed to test the homogeneity of the various effect sizes used in calculating the average correlation. If this test is significant, it indicates that some of the effect sizes are inconsistent and the average correlation may not be very representative of the overall effect size.

$$Z_\rho = \frac{1}{2} \times \ln\left(\frac{1+r}{1-r}\right) = atanh(\text{r}) \qquad [1]$$

$$\overline{Z} = \frac{(N_1-3)Z_1 + (N_2-3)Z_2\,\text{K} + (N_K-3)Z_K}{(N_1-3) + (N_2-3)\text{K} + (N_K-3)} \qquad [2]$$

$$r_Z = \frac{e^Z - e^{-Z}}{e^Z + e^{-Z}} = tanh(\text{Z}) \qquad [3]$$

$$SE_Z = \frac{1}{\sqrt{(N_1-3) + (N_2-3)\text{K} + (N_K-3)}} \qquad [4]$$

In addition to reporting the raw averaged correlation (uncorrected), the averaged correlation was also reported after applying the correction for *attenuation* (due to the unreliability of the variables). Although it is possible to correct for the unreliability of both variables in a correlation, typically reliability is only available for the predictor variable (*personality* in this case), and not for the criterion variable (*leadership* in this case). The formula to correct a correlation for the unreliability of a predictor is shown in equation 5.

$$r_{12}{}' = \frac{r_{12}}{\sqrt{r_{11}}} \qquad\qquad [5]$$

B. PERSONALITY & JOB PERFORMANCE

The use of personality assessment for the purpose of predicting job performance has been around for over eight decades (Oakes, Ferris, Martocchio, Buckley, & Broach, 2001). For years, however, this practice was debated and criticized due to a lack of empirical evidence to support its value. For example, Guion and Gottier (1965) examined the validity of personality measures in personnel selection and concluded that: *"it is difficult in the face of this summary to advocate, with a clear conscience, the use of personality measures in most situations as a basis for making employment decisions"* (p.160). The perception of personality assessment as a valid predictor of job performance, however, has improved over time, due in part to the increase in improved empirical investigations and the subsequent use of meta-analytic techniques. Currently there exists a considerable amount of support for the use of personality assessment in the selection of employees and the prediction of job performance (Barrick, Mount, & Judge, 2001). This review of personality and job performance will begin with a brief review of the literature on personality and job performance in general, and then will shift in focus to military and police studies.

Personality & Job Performance in General

Barrick *et al.* (2001) summarized the results of 15 meta-analyses that have examined the relationship between the five-factor model of personality traits and job performance. Conscientiousness was found to be a valid predictor across criterion measures in all occupational groups examined. The correlation between Conscientiousness and job performance ranged from the mid .20's to the low .30's. The authors suggested that Conscientiousness is an important trait and should occupy a central role in theories seeking to explain job performance. Emotional Stability was also found to be predictive when overall job performance was the criterion. The correlation of Emotional Stability with more specific performance criteria and occupational groups, however, was less than that of Conscientiousness. The correlation between Emotional Stability and job performance fell in the mid .20's range. Barrick *et al.* (2001) suggested that future research should investigate the breadth of the Emotional Stability construct to determine whether or not expanding its breadth would improve its predictive validity. The remaining three personality traits (Extraversion, Openness to Experience, and Agreeableness) were not predictors of overall work performance, however, they were predictive for specific performance criteria for some occupational groups.

Tett, Jackson, and Rothstein (1991) also completed a meta-analysis examining the relationship between the "Big Five" measures of personality and job performance. They reported an overall sample weighted mean correlation of .16 and when corrected for unreliability, the correlation increased to .24. Tett *et al.* (1991) found better prediction in military occupations (weighted mean correlation of .21) compared to non-military occupations (weighted mean correlation of .13). Agreeableness emerged as the most consistent predictor of job success among the five factors. Correlation coefficients of .10 for Extraversion, -.15 for Neuroticism, .22 for Agreeableness, .12 for Conscientiousness, and .18 for Openness to Experience were reported. The authors also examined differences between confirmatory and exploratory studies separately. They found that confirmatory studies (those with a rationale for expecting specific results) were significantly better at predicting outcome compared to exploratory studies (.198 vs. .081, respectively). For example, correlations increased when researchers selected personality measures that incorporate traits known to be correlated with job performance based on a job analysis.

Ones, Mount, Barrick, and Hunter (1994) critiqued the Tett *et al.* (1991) meta-analysis and identified several technical errors. They cautioned readers to interpret the findings with care, and suggested a reanalysis of the data. Tett, Jackson, Rothstein, and Reddon (1994) completed this reanalysis and they reported a new overall correlation of .118 and .174 when corrected for unreliability. Tett *et al.* (1994) suggested that the utility of a personality measure cannot be judged solely on a correlation coefficient, as the context in which it will be employed is also important. The authors proposed that a personality measure with modest predictive validity may provide significant financial saving for a large organization.

Personality & Job Performance in Military and Police Studies

Kilcullen, Mael, Goodwin, and Zazanis (1999) examined the individual attributes associated with effective job performance for 314 Special Forces soldiers (Green Berets) in the US military. Multiple predictor variables were examined including: cognitive ability, motivation and interest measures, physical fitness indices, and demographic factors. The measure of effective job performance consisted of supervisor's on-the-job evaluations. Although the authors did not measure personality variables, they did measure motivations and interests that were identified by the soldiers as important to their job performance. Findings from the investigation revealed that motivations and interests predicted job performance. Specifically, Cognitive Flexibility (.15), Work Motivation (.22), and Achievement Orientation (.25) were significantly related to performance. Physical, demographic, and cognitive attributes were not predictive of performance. The authors raised an important point with respect to the sample; the soldiers in this study had previously undergone extensive screening and, therefore, the range restriction may have limited the ability to detect the actual relationship among the variables investigated and job performance.

Barrick and Mount (1991) examined the validity of the Big Five personality dimensions in employment settings across five occupational groups (professionals, police, managers, sales, skilled/semi-skilled workers). Police officers comprised 13% of the sample and findings were reported for each of the five personality dimensions for this group. Conscientiousness emerged as the most consistent predictor of job success among the five factors. Correlation coefficients of

.09 for Extraversion, .10 for Emotional Stability, .10 for Agreeableness, .22 for Conscientiousness, and .00 for Openness to Experience were reported. Barrick and Mount reported that Conscientiousness was a valid predictor across all occupations and all performance criteria. Extraversion was also a valid predictor of job performance for all occupations, with the exception of police officers. Openness to Experience was related to training proficiency across all occupations, while Agreeableness and Emotional Stability were unrelated to job performance measures for any of the occupations. Barrick and Mount combined both subjective and objective measures in their analysis of job performance, which is problematic with respect to predicting the differential validity of objective and subjective measures.

O'Brien (1996) examined the predictive validity of personality testing in police selection in 41 published studies. O'Brien reported an overall sample-weighted mean correlation of .19 and, when corrected for unreliability, the correlation increased to .25. Studies specifically investigating job performance were associated with a mean correlation of .21, which increased to .27 when corrected for unreliability. O'Brien also examined the validity of personality test scales based on the five-factor model. Correlation coefficients of .13 (.16 when corrected for unreliability) for Extraversion, .16 (.20 when corrected for unreliability) for Emotional Stability, .08 (.11 when corrected for unreliability) for Agreeableness, .12 (.16 when corrected for unreliability) for Conscientiousness, and, lastly, .15 (.20 when corrected for unreliability) for Openness to Experience were reported. O'Brien found the Minnesota Multiphasic Personality Inventory (MMPI; Butcher, Dahlstrom, Graham, Tellegen, & Kraemmer, 1989) to be a superior predictor of performance compared to the California Psychological Inventory (CPI; Gough, 1987). O'Brien reported a mean validity of .38 (.46 when corrected for unreliability) for the MMPI scales and a mean validity of .27 (.32 when corrected for unreliability) for the CPI scales.

Varela (2001) completed a meta-analysis of the predictive validity of personality testing in law enforcement employment settings. The typical psychological screening of a police officer involves a multi-method assessment including measures of personality, intellectual ability, psychopathology, and a clinical interview. Assessment is geared toward screening-out unfit candidates, rather than selecting-in preferred officers. Varela reported that personality test data are modest predictors of personnel job performance. As expected, the prediction of job performance using multiple predictors was superior to prediction based on single predictors. In the case of single predictor studies, the California Psychological Inventory (CPI; Gough, 1987) emerged as the best predictor of law enforcement job performance with a correlation of .087, (.152, when corrected for study artifacts), in comparison to the MMPI with a correlation of .057, (.110, when corrected for study artifacts), and the Inwald Personality Inventory (IPI; Gardner, 1999) with a correlation of .054, (.098, when corrected for study artifacts). The CPI is a measure of normal personality traits, whereas the MMPI and the IPI assess psychopathology. It should be noted, however, that approximately 50% of the 462 items on the CPI come from the MMPI. Varela also reported a trend toward superior prediction in studies that used actual job performance as opposed to using training criteria. Based on Varela's findings, it may be more useful to focus on the prediction of job performance rather than the prediction of training success.

Summary of Personality & Job Performance

Prior to the 1980's it was widely accepted that personality testing was of little value in predicting job performance (Barrick, Mount, & Judge, 2001). More recent investigations, however, have indicated that personality assessment is useful in predicting job performance (Barrick & Mount, 1991; Barrick *et al.* 2001; Goodstein & Lanyon, 1999; O'Brien, 1996; Ones *et al.*, 1994; Tett *et al.* 1991; Varela, 2001). In their review of personality assessment in the workplace, Goodstein and Lanyon (1999) reported that, currently, there exists ample evidence to justify the use of personality measurement in predicting job performance. The relationship between personality assessment and job performance is modest ranging from .12 to .25, depending on the personality measure used and the criterion of job performance to be predicted. To date there is no consensus with respect to which personality assessment is superior when predicting law enforcement job performance. O'Brien (1996) found the MMPI to be a superior predictor of job performance compared to the CPI; however, Varela (2001) reported that the (CPI) emerged as the best predictor of job performance in comparison to the MMPI and the IPI.

Furthermore, there are discrepancies with respect to the personality traits that are most predictive of job performance. For example, Barrick and Mount (1991) reported that Conscientiousness was the only trait to correlate with job performance across occupational group and job performance criteria; however, Tett *et al.* (1991) found that Agreeableness was most strongly related to job performance. A more recent review by Barrick *et al.* (2001) also supported Conscientiousness as the fundamental personality variable in studies of workplace behaviour. Despite contradictions with respect to which personality measure or which dimension of personality is most predictive, the current consensus is that personality is predictive of job performance. Furthermore, when personality is used in conjunction with cognitive ability (the best predictor of performance according to Schmidt and Hunter, 1998), it can improve the success of performance prediction.

C. PERSONALITY AND LEADERSHIP

Theories of Leadership

On the basis of the amount of literature dedicated to the topic, leadership appears to be one of the most important issues in applied psychology (Hogan, Curphy, & Hogan, 1994) and it is one of the most extensively researched topics in the Social Sciences and Industrial/Organizational Psychology (Hogan & Hogan, 2002). Despite this fact, it appears to be one of the least understood constructs in the literature, and there is little consensus on what constitutes, and what contributes to, effective leadership. Within the leadership literature, concrete definitions of the construct being measured are often limited or absent. Additionally, there has been comparatively little attention dedicated to the investigation of the relationship between leadership and human nature in general (Hogan & Hogan, 2002). The following literature review is not intended to be exhaustive, but rather highlights much of the pivotal research that has directed the study of leadership in the past century.

As stated, a common definition of leadership is lacking in the literature. Hogan, Curphy, & Hogan (1994) asserted that leadership involves persuading others to put aside their individual concerns in order to pursue a common goal for the good of a group. Leadership is not thought to

be akin to dominance in the aggressive sense. There appears to be agreement that a ruler who reigns through imposing fear of reprisal is not leading, per se. Rather, leadership occurs when individuals willingly adopt the goals of a group and form into cohesive teams in order to meet those goals (Hogan, Curphy, & Hogan, 1994). Similarly, Chemers (2000; page 27) defined leadership as *"a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task"*. For the purposes of this discussion, use of the term "Leadership" will refer to the general definitions outlined above.

Notwithstanding the previous discussion, there are many definitions and theories of leadership. Thomas (1999) and Walker (1997) reviewed the many theories of leadership that have been proposed over the last century including the "great man" theory, trait theories, situational theories, and person-situation theories. The great man theory is based on the idea that leaders are born and that no amount of education or motivation can change an individual's predisposition. Trait theories, similar to the "great man" theory are also focused on specific traits (e.g., physical, mental, and psychological) that can differentiate leaders from followers. In situational leadership theories it is proposed that different leadership styles are required depending on the situation and the followers' abilities, leading to the idea that different kinds of leaders or leadership strategies are needed in various situations. Walker (1997) suggests that leadership ability is relative to the situation. Proponents of person-situation theory examine both the role of the person and the role of the situation in determining effective leadership, suggesting that both contribute to leadership performance.

In their review of personality measurement and workplace behaviour, Goodstein and Lanyon (1999) reported that most of the research on leadership has not dealt solely with leadership but has also included supervisory management. The literature in this area is very unclear, with the interchangeable use of the terms management and leadership. This paper will attempt to focus primarily on investigations of leadership. There currently exist a number of questionnaires to assess leadership abilities, for example: the Leadership Assessment Inventory (LAI, Burke, 1994); the Multidimensional Leadership Questionnaire (MLQ, Bass, 1985); the Leadership Practices Inventory (LPI, Kouzes & Posner, 1987); the Leadership Behavior Questionnaire/ The Visionary Leader (LBQ, Sashkin, 1996); and the Campbell Leadership Index (CLI, Campbell, 1991). A significant number of investigations, however, have utilized non-standardized measures of leadership. Rasor (1995) suggested that defining leadership is a difficult task because of the numerous ways in which the term could be measured. In fact, it is common for studies to use any or all of the following definitions: an organization's own measure of leadership; salary indices; supervisor, subordinate, and peer ratings; measures of productivity; and level of income generated. As Bradley, Nicol, Charbonneau and Meyer (2002) reported, it is also common for studies to employ multidimensional performance or leadership constructs. These authors explained that personality may be related to specific dimensions but when multidimensional constructs are used, the correlations between the predictor and the criterion can be obscured.

Currently, the most prevalent theories of leadership are the Transactional Theory and the Transformational Theory. Transactional leaders operate on a reward-based approach. They reward followers when agreed upon objectives are met and they intervene only when problems arise. Thus, the majority of interaction between leaders and followers is corrective in nature. A growing body of literature supports the assertion that transformational leadership more

effectively optimizes performance across a variety of contexts than does transactional leadership (e.g., Barling, Weber, & Kelloway, 1996; Geyer & Steyrer, 1998; Yammarino & Bass, 1990). Transformational leaders, also known as Charismatic leaders, gain the respect and trust of their followers. They motivate their subordinates through setting challenging goals, stimulating creativity, and dedicating personal attention to each individual (Bass & Avolio, 1994). There are four dimensions of transformational leadership: Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individual Consideration (Bass, 1985). Idealized influence involves providing a charismatic role model for followers. This characteristic is thought to be the most prototypical of leaders and is often the most important dimension (Judge & Bono, 2000). The leader behaviours of presenting a clear, appealing and motivating vision to followers make up the inspirational motivation dimension. Although charisma and vision are different concepts, research has found that they are highly correlated (Chemers, 2000). Within the Intellectual Stimulation dimension are behaviours such as challenging the status quo and questioning assumptions. These behaviours are linked to stimulating thought, problem awareness, creativity, and beliefs and values in followers. Individual consideration involves being aware of and attending to the concerns and needs of followers. In general, the literature supports the assertion that subordinates are more receptive to, and productive under, the transformational style of leadership in today's market place.

Personality Traits and Leadership

There are several areas of concentration in research that investigates effective leadership. The focus of several theories is on the interactions between leaders and their followers [e.g., the Path-Goal Theory of leadership (House, 1996); Transformational Theory (Bass & Avolio, 1994); and Leader-member Exchange Theory (Graen & Uhl-Bien, 1995)]. Other theories have focused on specific capabilities that leaders possess that allow them to be effective in the leadership role. Trait theories of leadership have long been used as a model for understanding leader performance, with leadership being attributed to characteristics of the individual, such as intelligence or dominance. This approach to the study of leadership has waxed and waned in popularity over the past century. Although a variety of methods to assess leader characteristics have been used across these studies, they all sought to identify personal characteristics that differentiated leaders from followers. One of these methods involved observers rating the behaviour of individuals in situations that permitted the emergence of leaders independent of assigned leader authority or an official leadership role. In other studies, participants were asked to identify the person whom they would prefer as a leader, or how they felt leaders differed from followers. Other research focused on identifying the personal attributes of those in positions of responsibility. Yet another method involved the analysis of the biographies and case histories of leaders. These methods reflect the general directions of the current literature on personality and leadership. As will become clear in this discussion, the results of much of the research on personality traits and leadership are ambiguous at best, given the lack of a common language with respect to the personality characteristics being measured.

Progression of the Literature on Personality and Leadership

Stogdill (1948) examined 124 studies that were conducted between 1904 and 1947 in an attempt to identify traits and characteristics that were associated with leadership. He found that speech

fluency, originality, ambition, sociability, likeability, and cooperativeness were the personality attributes most strongly related to leadership. He also noted, however, that the presence of these traits did not guarantee leadership success. There were several methodological limitations to Stogdill's study; however, it served to pave the way for years of research in the area of personality and leadership. In 1974 Stogdill completed a second comprehensive review of the leadership literature covering the period between 1948 through 1970. He investigated characteristics as they were related to four criteria: leadership effectiveness; holding a leadership position; traits that differentiated effective from ineffective leaders; and traits that differentiated between higher echelon and lower echelon leaders. He found that the following personality characteristics were consistently supported: high level of energy; adjustment; originality; dominance; confidence; sociability; achievement; and responsibility. Stogdill also noted that personality traits interact with situational cues across a variety of contexts thus necessitating the consideration of both of these areas in making selection decisions or leadership predictions.

Dominance as a personality trait has received considerable support across a variety of studies; however, the definition of Dominance in these studies is not always congruent or clarified. In the meta-analysis conducted by Lord, DeVader, and Alliger (1986) it was concluded that Masculinity and Dominance were significantly correlated with leadership perceptions. Nyquist and Spence (1986) found that dominance scores predicted the tendency of individuals to assume the leadership role. Smith and Foti (1998) also explored dominance, but more specifically they explored the relationship that dominance, intelligence, and general self-efficacy had with emergent leadership. In their study, Dominance was measured via the Dominance subscale from the Personality Research Form (Jackson, 1987). Intelligence was assessed with the Wonderlic Personnel Test - Form A, a self-administered, paper-pencil test of general intelligence (WPT; Wonderlic, 1983). Seventeen items from the 30 item General Self-efficacy Scale were used as the measure for general self-efficacy (Sherer *et al*., 1982). Leader emergence was assessed via a manufacturing game task that involved the building of jeeps, robots, and boats out of Lego pieces and selling the finished products for the greatest amount of profit. Zaccaro and colleagues (1991) tested this task and found it to be significantly related to leadership style. Smith and Foti (1998) found that all three trait variables were significantly associated with leader emergence. They also investigated the relationship of patterns of these traits with emergent leadership and found that individuals who were high on all three traits emerged as leaders more often than did all other individuals. Those who scored low on all three traits emerged as leaders less frequently than did any other individuals. The authors suggest that these results support investigating leadership on the basis of patterns of traits, rather than solely investigating the relationship between independent traits and leader emergence.

Hogan, Raskin, and Fazzini (1990) found that those who emerged as leaders in a sample of police applicants scored highly on intelligence, ambition, and likeability measures. Gough (1990) found that emerging leader criteria were highly correlated with the following traits: capacity for status; dominance; empathy; and independence on the California Psychological Inventory (CPI; Gough, 1987). Morrow and Stern (1990) found that individuals who performed better on a management assessment centre exercise known as the leaderless group discussion scored higher on the personality traits of ascendancy (dominance), intelligence, and sociability. Northouse (2001) summarized the literature on personality and leadership and found that five traits consistently emerged in the major studies: Intelligence; self-confidence; determination; integrity;

and sociability. Bass (1998) found traits such as self-acceptance, ascendancy, sociability, and internal locus of control to be associated with effective leadership. Kickul and Neuman (2000) found that Extraversion, Openness to Experience, and Cognitive Ability were predictive of emergent leadership behaviour. They also found that Conscientiousness and Cognitive Ability were related to team performance.

Dubinsky, Yammarino, and Jolson (1995) examined the relationship between the personal characteristics of supervisors and four dimensions of transformational leadership (charismatic leadership, inspirational leadership, intellectual stimulation, and individualized consideration) in a sample of sales managers. These dimensions were assessed with the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1989). They explored seven personal characteristics: emotional coping; behavioural coping; abstract orientation; risk taking; innovation; use of humour; and experience. Only the abstract orientation scale was consistently related to all four dimensions of transformational leadership; however, it was in the opposite direction to that predicted. The authors speculated that these results were largely a function of the work requirements of the sales manager sample. Given that sales work is often very concrete and fast-paced, the need for, and appropriateness of abstract skills in this work environment is low. This certainly highlights the importance of completing a job analysis to formulate a clearer picture of which leadership skills are required in particular settings. Nilsen (1995) has asserted that a fundamental lacking in the literature on personality and leadership is the examination of leadership as a global criterion and proposed that the relationship between traits or characteristics and aspects or dimensions of leadership or job performance should be the focus of investigation.

According to Yukl (1994), decades of research have suggested that the presence of certain personality traits may increase the probability that a leader will be effective, but it does not guarantee such. Yukl (1994) examined the relationship between personality traits and specific aspects of leadership performance among managers. He found that particular traits can be related to some aspects of leadership, but are not related to others. Energy level, stamina, and stress tolerance were related to managerial performance. These traits appear to assist managers in coping with fast-paced, stressful situations. The more self-confident managers were, the more likely they were to engage in and persist with tasks that were difficult, to attempt to influence others, and to set challenging goals. Leaders who were self-confident were also likely to have increased commitment from their subordinates. On the basis of empirical research it has been determined that maturity and adjustment were related to managerial performance. Managers who were well adjusted were better able to maintain co-operative relationships with subordinates, peers, and supervisors. Having integrity and being trustworthy are traits necessary to facilitate fostering the loyalty of followers and the support of supervisors and peers. The desire to influence people and the presence of the ambition to hold positions of authority are related to managerial performance, especially in the areas of organizing and directing group activities, advocating and promoting change, imposing discipline, and lobbying for resources. However, ambition must be of the appropriate intensity; ambitious managers tend to emphasize task objectives, take initiative, act decisively, and assume responsibility. Managers who are too ambitious may focus on their own achievements over those of the group, may lack the ability to delegate and thus to develop the abilities of their followers, and they may lose their influence over their subordinates. Conversely, managers who are highly concerned with being liked may avoid conflict and difficult decisions, and may reward subordinates as a means of gaining

popularity rather than optimizing the performance of the work unit. Yukl's (1994) findings advance the knowledge of the relationships between personality traits and leadership by illuminating many of the ways that traits may influence different aspects of a leader's performance. It is of note that while many of his findings are empirical, some are speculative and thus further empirical research is required in order to confirm his ideas (Nilsen, 1995; Yukl, 1994).

Leadership and the NEO Personality Inventory-Revised (NEO PI-R)

The Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) is a personality inventory that measures the five dimensions or domains of personality: Neuroticism; Extraversion; Openness; Agreeableness; and Conscientiousness (see Appendix A). This self-report inventory is used to assess these personality dimensions in normal, adult samples. It is comprised of 240 items, each on a 5-point scale, from strongly disagree to strongly agree. In brief, *Neuroticism* is the inclination toward expressing anxiety, anger, depression, self-conscientiousness, impulsiveness, and vulnerability. *Extraversion* is marked by friendliness, gregariousness, assertiveness, energy, adventurousness, and other positive emotions such as enthusiasm, and optimism. *Openness* is characterized by imagination, inventiveness, insightfulness, curiosity, and a need for variety. *Agreeableness* is a tendency toward altruism, trust, and sympathy. And finally, *Conscientiousness* is characterized by self-discipline, order, reliability, ambition, and foresight (Costa & McCrae, 1992).

Hogan, Curphy, & Hogan (1994) reviewed the extensive literature on leadership and personality traits and concluded that the data could best be understood by using the Big Five approach to the study of personality. Thus, they used the Big 5 vocabulary to mitigate the methodological problem of varied terms and definitions across the literature. They found that leaders tended to be high in Surgency (Extraversion), Emotional Stability (low in Neuroticism), and Conscientiousness, as well as Intellectance (Openness). Hogan recommended selection should be based on a specific group of traits, in addition to the results of a job analysis. He further suggested that leaders should be screened for less favourable traits using the criteria for Personality Disorders, as set out in the *Diagnostic and Statistical Manual for Mental Disorders*, the most current version being the DSM-IV Text Revision (DSM IV-TR; APA, 2000).

Judge and Bono (2000) conducted a study investigating the links between the Five Factor model of personality and transformational leadership. They also explored whether or not the five factors were related to leader effectiveness as measured by supervisors' and subordinates' ratings of effectiveness. They found that Agreeableness emerged as the strongest and most consistent predictor of transformational leadership behaviour. Extraversion and Openness to Experience also were significantly correlated with transformational leadership but the effects of these relationships dropped appreciably when the other Big Five traits were controlled. Neither Neuroticism nor Conscientiousness were found to be related to leadership. The lack of a relationship between Conscientiousness and leadership was not surprising given past research on this factor; however, the findings with respect to Neuroticism were counter to prediction. Further, the researchers found that the facets of the NEO PI-R did not predict transformational leadership any better than did the general five factors. Finally, these authors found that transformational leadership predicted leadership effectiveness as rated by their supervisors.

Conversely, Nilsen (1995) found that the Big 5 was not the best measure to use when attempting to predict leadership effectiveness. She found that the five dimensions did not provide an optimal level of specificity for measuring personality when the goal was to predict leadership performance. Nilsen (1995) noted that the influence of personality on leadership is not necessarily of a direct nature. It has been suggested that performance is a function of three major determinants: motivation; declarative knowledge; and procedural knowledge and skill (Campbell, McCloy, Oppler, & Sager, 1993). Personality may affect performance through any of these determinants. Motivation can be conceptualized as a combination of three choice behaviours: the decision to expend effort; the decision about the level of effort to expend; and the decision to continue engaging in the activity at that energy level. Declarative knowledge is the understanding of the requirements of a given task and the knowledge that is necessary to facilitate the meeting of those requirements. Procedural knowledge and skill result when knowing what to do is combined with knowing how to do what needs to be done. Nilsen (1995) provided examples of how motivation, declarative knowledge, and procedural knowledge and skill may be mediating variables in the relationship between personality and leadership performance. She suggested that Conscientiousness may influence an individual's motivation and thus his or her choices regarding how much time and effort to expend on work-related tasks rather than personal tasks such as visiting with co-workers while at work. It may also influence decisions regarding whether or not to adhere to difficult tasks, even when faced with obstacles.

Personality may help or hinder the acquisition of declarative knowledge. If tasks are not clearly defined, individuals with differing personality traits may interpret the task quite differently. For example, a manager who scores highly on Agreeableness instructed to provide "constructive and timely feedback" to subordinates may respond by praising good performance and ignoring poor performance. In contrast, a manager who scores moderately highly on Agreeableness and Surgency (Extraversion/Dominance) may interpret this to mean that good performance should be praised and poor performance should be corrected through positive encouragement. A supervisor who scores low on Intellectance (Openness) may treat all of her employees alike and not be aware of the different factors that might be motivating her subordinates (Nilsen, 1995).

Personality may also influence ability or skill and procedural knowledge. An individual who is naturally dynamic, enthusiastic, and confident (scores highly on Extraversion) will likely have an easier time translating the declarative knowledge of effective public speaking or inspiring subordinates into the procedural knowledge and skill of public speaking or leadership. However, the presence of traits that appear to be related to effective public speaking performance do not guarantee that this will transfer into good performance. Similarly, not scoring highly on these traits does not mean that the related skills cannot be taught (Nilsen, 1995).

In sum, using the NEO PI-R as a personality measure for the purposes of leader selection is not unanimously supported. There is, however, strong evidence for the validity and reliability of this measure (e.g., Costa & McCrae, 1992) and the personality traits that received support in the majority of the literature either capture directly, or fall under the same conceptual areas as those measured by the NEO PI-R. Organizational heads who have a clear conceptualization of the needs of their organizations would likely benefit from the use of this measure in personnel selection over many of the other measures on the market given it's widespread use, and the common understanding and general acceptance of the personality factors it assesses.

Leadership and the Myers-Briggs Type Indicator (MBTI)

The Myers-Briggs Type Indicator (MBTI; Myers, & McCaulley, 1985) is a measure of personality based on Carl Jung's theory of psychological types. The MBTI uses four dimensions to assess an psychological individual's type: Extraversion (E) versus Introversion (I); Sensing (S) versus Intuition (I); Thinking (T) versus Feeling (F); and Judgement (J) versus Perception (P). These four different dimensions of personality reflect basic preferences that individuals have (Hoffman, 1997). The preference of each index is independent of the preference on the other three indices; thus there are sixteen possible combinations or types.

According to Walker (1997) the extraversion-introversion dimension addresses how an individual reacts to the environment. Rasor (1995) reported that this dimension is designed to reflect whether a person is oriented primarily toward the outer world (extraversion) or toward the inner world (introversion). The sensing-intuitive dimension describes how individuals perceive reality and gather information. The sensor has an interest in perceiving objects, events, and details of the present moment and is interested in what is real and its applications. The intuitive individual sees the possibilities and insights of the future and is comfortable with abstractions and theory. The thinking-feeling dimension reflects how a person makes decisions. The thinker has a preference for rational judgements by using objective or logical analysis. The feeler tends to make choices based on the personal impact of the decision and by weighing relative person-centred values. The judging-perceiving dimension describes how individuals interact with the world. The judger has a preference for organizing and controlling events. The perceiver tends to stand back to observe and understand events.

Rasor (1995) examined that relationship between personality profiles and exemplary leadership practices of mid- and executive-level law enforcement and corrections leaders. The Myers-Briggs Type Indicator (MBTI) and the Leadership Practices Inventory (LPI) were administered to participants. The LPI consists of self-ratings and superior and subordinate ratings of five practices including challenging the process, inspiring a shared vision, enabling others to act, modelling the way and encouraging the heart. Rasor collected data from 279 law enforcement and 53 corrections officers and found that the most frequent MBTI profile for this sample was Introversion-Sensing-Thinking-Judging. There were no significant differences on the MBTI with respect to officer rank. Rasor found that there was no significant relationship between personality types and superior and subordinate rating scores on the LPI. The eight MBTI preference categories did not predict leader ratings on the LPI by superiors and subordinates. In contrast, Rasor found a significant relationship between personality types and self-rating scores on three of the LPI categories including challenging the process, modelling the way, and encouraging the heart. The higher an individual's score on Extraversion or Intuition the higher that individual tended to rate him- or herself on challenging the process. Individuals with high scores in Sensing and Judging tended to rate themselves higher in modelling the way. Findings also revealed positive correlations for the MBTI preferences of Extraversion and Judging with the LPI practice of encouraging the heart.

Rasor (1995) reported approximately 40 correlations between MBTI personality scales and leadership variables on the LPI, so it would be worthwhile to summarize these results using a meta-analysis (see Table 1). Given that the scales on the MBTI are bipolar (e.g., *Extraversion-*

Introversion), some relationships with leadership variables would be hypothesized to be positive and some relationships would be expected to be negative. In this case, the direction of the effects or the sign of the correlations were ignored in these analyses. For each of the eight MBTI personality scales, the mean of the absolute value of the correlation (uncorrected) with the five LPI leadership variables is reported in Table 1, as well as the corrected mean correlation (adjusting for the unreliability of the predictors). All of these mean correlations were significantly different from zero, except for the mean correlation with respect to the *Feeling* scale. In addition, all of the homogeneity tests for effect sizes were not significant, indicating that there was little variation in the effect sizes for a given personality scale on the MBTI.

Table 1

**Summary Table for Meta-Analysis of
Rasor's (1995) Study**

MBTI Scale	Mean | r |	Corrected r	Significance	Homogeneity Test
Extraversion	.18	.20	p < .0001	$\chi^2 = 4.45$, df = 4, n.s.
Introversion	.20	.22	p < .00001	$\chi^2 = 3.85$, df = 4, n.s.
Sensing	.21	.22	p < .00001	$\chi^2 = 2.88$, df = 4, n.s.
Intuition	.21	.22	p < .00001	$\chi^2 = 2.51$, df = 4, n.s.
Thinking	.09	.10	p < .05	$\chi^2 = .817$, df = 4, n.s.
Feeling	.07	.08	n.s.	$\chi^2 = .756$, df = 4, n.s.
Judging	.20	.21	p < .00001	$\chi^2 = 7.96$, df = 4, n.s.
Perceiving	.18	.19	p < .0001	$\chi^2 = 7.62$, df=4, n.s.

Hoffman (1997) explored the relationship between personality traits as measured by the Myers-Briggs Type Indicator and school superintendents' perceived effectiveness with respect to district management and relations. Forty-nine superintendents agreed to participate. The results indicated that the personality dimensions of Thinking (as opposed to Feeling) and Sensing (as opposed to Intuition) were positively correlated with the frequent use of good management practices. None of the MBTI dimensions were related to good relations with board members.

The present authors also performed a meta-analysis on the results from Hoffman's (1997) study. The direction of the effects (or the sign of the correlation) was again ignored for these analyses. The mean absolute value of the validity coefficient for the four MBTI scales predicting use of good management practices was .28 (uncorrected) or .31 (corrected for unreliability of the predictors). This mean correlation was significantly different from zero (p < .001). The test for homogeneity of the effect sizes was not significant ($\chi^2 = 3.13$, df = 3, p = .37), indicating that there is relatively little variation among the effect sizes. The mean validity coefficient for the four MBTI scales predicting good relations with board members was only .09 (uncorrected) or .10 (corrected for unreliability of predictors). This mean correlation was not significantly different from zero (p > .5). Also, as above, there was little variation among the effect sizes (homogeneity test $\chi^2 = .60$, df = 3, p = .90).

Walker (1997) described the personality profiles of Air Force commissioned officers at supervisory, middle, upper, and executive levels using the MBTI. Walker found that based on the

MBTI, the Air Force population is significantly different from the United States population at large. Significant differences were also found between leadership levels. Although all officer levels had strong Sensing-Thinking-Judging preferences, lower leadership levels tended to have more diverse personality profiles, while the concentration of Thinking-Judging profiles strengthened as the levels increased. Individuals with Sensing-Thinking-Judging profiles tend to be tough minded, analytical, and make decisions based on principles and systems, overall effects, and rational analysis of outcomes. Individuals with Thinking-Judging profiles, however, tend to have difficulty with change and are not as concerned with the human element in organizations. This is consistent with other research that has found that Sensing-Thinking pairs is the most common for those in leadership positions (Walck, 1992).

In a study of the personality profiles of US Army Generals, Campbell (1995) also reported that the STJ profile was the most common. Campbell examined the personality profiles of 163 of Army Generals in the US military. The author also examined the profiles of 139 high-level corporate executives and 1000 individuals representing a normative sample of workers from corporate, government, and public service organizations. The California Psychological Inventory (CPI; Gough, 1987), the Meyers-Briggs Type Indicator (MBTI; Myers, & McCaulley, 1985), and the Strong-Campbell Interest Inventory (SCII; Campbell, 1987) were administered. The three highest scores on the CPI for the Generals were on the Dominance, Self-Acceptance, and Achievement via Conformance scales. Compared to the other two groups, the Generals also scored significantly higher on the Responsibility and Socialization scales. The Generals scored the lowest relative to the other two groups on the Flexibility scale of the CPI. This inflexibility of military leaders is of concern given Campbell's (1995) assertion that society is moving into an era where diplomatic ingenuity, interpersonal sensitivity, and creative vision are going to be the essential tools for the preservation of peace. Military organizations may wish to emphasis the importance of flexibility in leadership styles to their officers.

The results from the MBTI indicated that the STJ profile was the most common in the sample of Generals. In fact, the ISTJ and ESTJ profiles accounted for 56% of the Generals sample. Individuals with the STJ profile tend to be practical, analytical, and to make decisions based on principles and rational analysis of outcomes. They tend to be responsible and like to run and organize activities, they have difficulty with change and are not as concerned with the human element in organizations. On the SCII, the Generals scored almost two and a half standard deviations above the mean on the Military Activities scale (not surprisingly). They also had high scores on the Adventure and Business management scales. Their lowest scores were on the Art, Music/Dramatics and the Domestic Arts scale. Based on the two measures of personality and the interest inventory, Campbell (1995) described the overall profile of an individual in the General sample as dominant, competitive, action-oriented, and patriotic. These individuals appear to be naturally attracted to physical adventure and militaristic activities and they have little interest in artistic and nurturing activities.

D. PERSONALITY & LEADERSHIP WITHIN A MILITARY/POLICE CONTEXT

The Evolving Role of National Military Forces

Walker (1997) discussed the "new" military and its evolution toward a constabulary force. The military of today and of the future requires unique skills in a broad range of applications, from peacekeeping and humanitarian efforts, to the employment of soldiers for war. The type of leadership required for traditional wartime efforts is no longer sufficient or appropriate in a peacetime military.

Gurstein (1999) discussed the required leadership skills in the peacekeeping army of the future. He described a peacekeeping army as having a global responsibility. Gurstein reported that identifying characteristics of leadership specifically for peacekeeping is essential as peacekeeping missions typically run in conjunction with conventional military national security mandates. Based on multiple interviews with experienced United Nations peacekeepers and military leaders from both the American and Canadian militaries, Gurstein formulated the following comparisons between traditional military leadership and peacekeeping leadership:

1. National military leadership is concerned with "unity of command"; peacekeeping leadership is concerned with "unity of effort".

2. National military forces look to control a situation; a typical peacekeeping mandate is simply to provide a stabilizing presence on the ground.

3. The skills required for effective leadership in multinational and multicultural peacekeeping forces (particularly United Nations peacekeeping forces) differ from those required in national and culturally homogeneous militaries.

4. Cultural background is of less significance in predicting the effectiveness of a peacekeeping leader than it is for a traditional military leader.

5. *"Leaders in United Nations peacekeeping forces are required to be subordinate to the United Nations as a multicultural political body with all that implies".*

Gurstein proposed that skills in communication, human relations, counselling, and ethics are essential for leadership in a peacekeeping military. Leaders are required to receive and distribute information accurately and will increasingly have to rely on automated means for the communication process. In a peacekeeping context, there will be no single correct information source, and leaders will have to be aware of language and cultural differences in communication. New leaders will have to possess a high degree of communication management skills. Leaders will also have to be effective in human relations, as success will depend upon the co-operation of military, peacekeeping, civilian, government, and non-government organizations. These relationships will inevitably raise cross-cultural issues with respect to the role of the leader and the responsibilities of other groups and individuals. Counselling skills will also be required of

leaders as they are responsible for the overall well being of soldiers. In recent years, many peacekeeping forces have experienced the brutality of war that was only previously experienced in traditional military operations. As Gurstein outlined, there is a tendency for modern warfare to be moving away from such incidents, while peacekeeping is increasingly required to be involved in such events. Given this trend, leaders will need the skills to respond to the trauma experienced by their forces. Again, cultural issues will likely be significant when counselling multi-national forces.

Gurstein also describes the diplomatic, negotiation, conflict management, and media skills required by leaders of peacekeeping forces. The ethical concerns faced by peacekeeping missions may also be more complicated as forces will have a supra-national ethical standard that will supersede any national military mandate in order to ensure the credibility and neutrality of peacekeepers. Gurstein proposed that peacekeeping leadership requires many of the same skills as leadership in other traditional military contexts; however, each requirement is performed against a background of a highly political, multinational, multilingual, and multicultural environment. Therefore, although the personality types and leadership dimensions required will be similar to those required for national military leaders, new peacekeeping leaders will be required to demonstrate additional abilities in mediation, conflict resolution, and support of civilian welfare. New leaders will require patience, the ability to compromise, and empathy for opposing points of view. Gurstein sites from the unpublished manuscript writings of Major Last (1995) of the Canadian military on peacekeeping: *the soldier's instinct to apply massive combat power from the outset of an operation must be replaced by the policeman's measured escalation and minimum use of force*.

Based on his interviews, Gurstein proposed that empirical research be conducted on the required abilities of a peacekeeping leader, as this area has not been adequately investigated. Furthermore, there is a dearth of empirical research on the relationship between personality dimensions and effective peacekeeping leadership. This is essential, as Gurstein proposed that peacekeepers may need to have somewhat different personality profiles compared to the profiles of non-peacekeeping military.

Similar to other organizations in society, militaries are becoming much more technologically advanced. As Walker (1997) outlined, the increasing technical nature of the military creates a variety of leadership development issues. Many of the future military leaders will initially begin their careers as technical specialists (e.g., informational technology managers, engineers, pilots, etc.). Krembs (1983) addressed the difficulties of transitioning technical specialists to leadership positions and these include:

1. *Strong identification with technical competence*. Technical Leaders tend to identify with their specialty rather than their organizational leadership role.

2. *Strong achievement drive*. Problem-solving opportunities attract achievement-motivated people. The strongest achievers get selected for leadership positions. As leaders move up the corporate ladder, internal conflicts begin between the desire to lead and maintaining technical competence.

3. *Low relationship orientation.* Due to the independent nature of technical problem-solving, many specialists prefer to work alone. This does not allow them to develop the interpersonal skills required in future leadership positions.

4. *Low levels of strategic thinking on organizational issues.* Specialists selected for leadership roles have trouble getting the support and co-operation of others. Krembs suggest that strong achievement orientations and distaste for political issues cause technical managers to avoid strategic thinking on organizational issues.

5. *Self-perception as a victim.* Because technical managers are reluctant to develop their political skills, they often lose internal organization battles. The result is that they feel misunderstood, powerless, and victimized. As this cycle continues, it becomes a self-fulfilling prophecy.

6. *Fear of technical obsolescence.* Technical managers tend to define successor failure through technical competence. This can result in a fear that they will "lose" their skills that moved them up the ladder. Juggling administrative and technical skills is difficult. Technical managers must learn other methods of staying informed of technical developments.

Descriptions of Leadership Characteristics

In one of the few studies to use job analysis, Sumer, Sumer, Demirutku, and Cifci (2001) identified the personality attributes required for officers in the Turkish Armed Forces. Interviews were completed with 78 current and retired officers. These officers were asked to complete a semi-structured interview on the responsibilities and required attributes of officers. Based on these interviews, a list of required attributes were compiled. Subsequently, this list was given to 500 officers who were asked to rate on a seven-point scale the extent that each attribute was relevant to the job of an officer, and its relative importance as compared to other attributes. The authors completed a principal component analysis and identified five personality dimensions considered important for the job of officer. These included: Conscientiousness-Self-Discipline, Military Factor, Self-Confidence, Agreeableness-Extraversion, and Leadership. The Conscientiousness-Self Discipline factor explained more than two thirds (27.63%) of the variance in the factor analysis and consisted of attributes such as job knowledge, work discipline, fairness and perseverance. The Military factor was comprised of items such as respect for the chain of command, orderliness, and strength of character. The Military Factor accounted for 3.34% of the variance in the factor analysis. Self-confidence explained 2.13% of the variance and consisted of attributes measuring self-assurance, courage and risk-taking. The Agreeableness-Extraversion factor accounted for 2.12% of the variance and the authors reported that it consisted of two of the "Big Five" dimensions. Finally, the Leadership factor included attributes of motivation and persuasiveness and explained only 1.44% of the variance.

Sumer *et al.* (2001) proposed that in addition to sharing attributes that are required for most jobs, the position of a military officer also requires unique personality attributes. They classified five factors of personality that were related to the specific job performance of an officer. Sumer, *et al.*

(2001) recommended that these factors might be employed in the development of job-specific personality tests. They cautioned, however, that the usefulness of these personality dimensions in predicting job performance would depend to a great extent on how they are measured and how performance criteria are assessed.

Nichols and Penwell (1995) reviewed 23 investigations of leadership characteristics associated with success in aviation, submersibles, polar stations, and expeditions (somewhat isolated, autonomous environments). The authors reported that despite differences in settings, effective leaders share a common core of personal traits and leadership attributes. The effective leader in these settings is one who is committed to mission objectives, is optimistic, has the respect of subordinates, and in turn, respects the crew. The effective leader uses participant decision-making when possible and makes crewmembers feel valued for themselves and their expertise. The leader is effective in maintaining group harmony and cohesion but takes charge during critical situations. The authors did caution, however, that there was some indication in the studies reviewed that the leader's level of consideration for his or her crew was positively associated with crew ratings of satisfaction, but negatively correlated with performance ratings from superiors.

Valentine (1994) examined leadership and gender role styles in 660 Army officers. The scales that this author used were the Leadership Style Diagnostic Inventory (Army version of the Hersey-Blanchard Leader Effectiveness Adaptability Description), the Bem Sex Role Inventory, and a questionnaire developed for the study to measure officer's attitudes and perceptions. Valentine found male and female officers used the same leadership style almost exclusively. Valentine reported that the Army has a very homogeneous work force and that self-selection of a military career may have contributed to the overwhelming uniformity and stability in both leadership and gender role style.

Cook (1992) completed a survey of 495 United States Air Force (USAF) commanding officers and 1,205 of their subordinates using Leadership Behavior Analysis II surveys. The goal of the study was to determine the leadership styles, flexibility, and effectiveness of USAF commanding officers as perceived by the officers and their subordinates. Cook reported that both officers and subordinates rated officers as having one primary leadership style (Participating) and one secondary style (Selling), as measured by the Leadership Behavior Analysis II survey. The officers' leadership style flexibility was perceived by both groups as being moderately flexible with no significant difference in perceptions. The officers' leadership style effectiveness was perceived by both groups to range between moderate to highly effective. Cook reported that the USAF officers relied primarily on one leadership style, and cautioned that USAF commanding officers may not recognize situations that call for different leadership styles or they may not possess the flexibility to apply different leadership behaviours in different situations. It is interesting to point out that both Cook and Valentine found that military commanding officers tend to rely on one primary leadership style and were not comfortable utilizing alternative approaches. Valentine also found that Army officers, regardless of rank or gender tended to use the same leadership style.

Correlational Investigations of Personality and Leadership

Thomas (1999) examined 2,015 cadets in the Reserve Officer Training Corps (ROTC) who were required to participate in an intensive, five-week leadership training and evaluation course. These cadets represented 150 colleges and universities from across the United States, and ranged in age from 18 to 33 (22% of whom were female). As a component of a battery of assessments, participants were administered the Hogan Personality Inventory (HPI; Hogan & Hogan, 1992) to explore the relationship between personality variables and leadership performance. For the purposes of this investigation, only the scales of Ambition, Sociability, and Prudence were included. Leadership performance was measured using a list of 16 performance indicators as developed by the leadership assessment program. Together these 16 indicators were used to compute an overall cadet evaluation score. This score was based on 1000 possible points and a score of 700 was required to successfully complete the course. The cadet evaluation score was quantified in two areas including military proficiency and leadership. The military proficiency scores were objective, and measure such abilities as physical fitness, land navigation, and marksmanship. The leadership scores were more subjective in nature, and included scores from the Field Leadership Reaction Course and Officer's Leadership Assessments. Only the leadership components of the cadet evaluation score were used in this study.

According to Thomas, the most surprising finding was the non-significant relationship observed between Prudence on the HPI and cadet evaluation scores. Prudence is the HPI measure of Conscientiousness, which has been found in other investigations (Barrick and Mount, 1991; Salgado, 1998) to be the most valid of the Big Five personality variables in predicting performance evaluations. As expected, Ambition on the HPI was positively related to cadet evaluation scores and demonstrated the strongest relationship out of all the predictors. Sociability was also related to the Cadet evaluation scores; more sociable cadets were evaluated more favourably. Barrick and Mount (1991) reported similar findings, and found that Extraversion was the most valid predictor of success in training.

In order to summarize Thomas' (1999) study, the current authors performed a meta-analysis on these results. Given that positive and negative relationships both have practical implications for predicting job performance, the direction of the effects (or the sign of the correlation) was ignored for these analyses. The mean validity coefficient for the three HPI scales predicting candidate evaluation scores (CES) was .10 (uncorrected) or .12 (corrected for unreliability of the predictors). This mean correlation is significantly different from zero (p < .00001), but this is mainly due to the large sample size employed (N > 900 cases). The test for homogeneity of the effect sizes, however, was also significant (χ^2 = 16.72, df = 2, p < .001), indicating that there is some inconsistency in the variation among the effect sizes, and that the average correlation may not be very representative of the overall effect size

Lall, Holmes, Brinkmeyer, Johnson, and Yatko (1999) evaluated the personality characteristics of 530 third-year midshipmen at the US Naval Academy to investigate the relationship between personality and military career success. The Hogan Personality Inventory (HPI; Hogan & Hogan, 1992) again was used to measure personality and class ranking was used as the measure of success at the Naval Academy. The authors reported that, compared to the general population, future naval officers displayed higher levels of Ambition, Sociability, Intellectance (Openness),

and School Success, and they demonstrated lower scores in Adjustment, Likeability, and Prudence on the HPI.

Midshipmen with the highest-class rankings were reported to have higher scores on the HPI scales of Ambition, Intellectance (Openness), Prudence, and School Success. Midshipmen with the highest-class rankings were also less likely to be empathetic and to experience guilt. As both Gurstein (1999) and Walker (1997) proposed, military leaders of the future will likely require empathy. Nichols and Penwell (1995) also described the effective military leader as sensitive to the needs of his or her subordinates.

Atwater, Dionne, Avolio, Camobreco, and Lau (1999) followed the leadership development of 236 male cadets from enrolment through graduation at a US military college. Measures of personality, self-esteem, stress tolerance, moral development, and physical fitness were collected from each cadet at enlistment. The development of self-esteem, hardiness, moral reasoning, and physical fitness were each tracked over a 4-year period. Profiles on each of these measures were then compared for the most and least effective leaders in the sample. The authors defined leadership emergence as the level of rank attained in the military hierarchy within the institution during the cadet's senior year. Peer rankings of cadet leader effectiveness were also obtained at the end of the fourth year with each cadet ranking all other cadets in his class (25-28 cadets). The Leader Potential Index (LPI), a subscale of the California Psychological Inventory (CPI; Gough, 1987) also was included in the investigation. The correlation between these two measures of leadership was .43 (p < .001).

To measure personality the authors administered the CPI to cadets during their first week at the college. For the purposes of this study the authors were only interested in the CPI composite factor representing Conscientiousness. The scales comprising this factor included: Responsibility, Self-control, Achievement via Conformance, and Socialization. These four scales were combined into a measure of Conscientiousness. The coefficient alpha value for this composite scale was .80. This composite index of Conscientiousness on the CPI was then correlated with level of leadership achieved in cadets (emergence), and leadership effectiveness (peer ratings). Using meta-analysis, the average correlation between Conscientiousness and leadership in cadets was .10 (uncorrected) or .11 (corrected for unreliability of the predictor), which was statistically significant (p < .05). The test for homogeneity of the effect sizes was non-significant, indicating that they were consistent ($\chi^2 = .30$, df = 1, p = .58).

Atwater *et al.* (1999) reported that cadets with greater cognitive ability were more likely to emerge as leaders, but were not rated as more effective by their peers. Schmidt and Hunter (1998) also reported that cognitive ability was the best predictor of overall job performance. Surprisingly, Conscientiousness, Moral Reasoning, and Hardiness were not significantly related to either emergence or effectiveness of leadership. Given the fact that social pressures and norms had less influence on individuals scoring highly on measures of moral development, it may be more difficult for these individuals to achieve leadership positions in a military context. Similar findings were reported by Lall *et al.* (1999), who evaluated the personality characteristics of 530 third-year midshipmen at the US Naval Academy. The authors reported that Midshipmen with the highest-class rankings were less likely to be empathetic and to experience guilt. It is

encouraging to note, however, that cadet's moral reasoning ability scores increased over their four years at the military college.

Similar to the finding for cognitive ability, cadet self-esteem and potential for leadership, as measured by the LPI, were positively related to leader emergence, but not to leader effectiveness. The authors note the fact that self-esteem was not significantly related to the peer rankings of leader effectiveness, which may reflect a tendency for modest cadets to receive more favourable rankings from peers. It is also interesting that cadet's self-esteem scores did not improve over the course of their education. The authors suggest that this may indicate that, through the training process, cadets realize their limitations.

Cadets with higher levels of physical fitness were more likely to emerge as leaders and were rated as more effective by their peers. Finally, cadets with more prior influence experiences were more likely to emerge as leaders and were rated as more effective by their peers. Atwater *et al*. completed a stepwise regression analysis using cognitive ability, hardiness, physical fitness, prior influence experiences, conscientiousness, moral reasoning, self-esteem, and the leader potential index as predictors of both leadership emergence and leadership effectiveness scores. Cognitive ability, physical fitness, and prior influence experiences were significant predictors, accounting for unique variance in leader emergence. The significant predictors of leader effectiveness were physical fitness and prior influence experiences. The authors also outlined that a larger number of individual difference measures were correlated with leader emergence verses effectiveness suggesting that individual difference variables may be more predictive of who will assume formal positions of leadership rather than how leaders will be perceived by their peers.

Bradley, Nicol, Charbonneau and Meyer (2002) reported that measures of personality are associated with leadership development in a military context. These authors examined the relationship between personality variables and leadership in a sample of 745 Canadian Forces (CF) officer candidates. This study took place over five years and cadets were assessed initially upon selection for enrolment in the CF, at the end of the their leadership course, and again four years later. The authors utilized multiple sources for both the personality and leadership ratings. To assess personality, Bradley *et al*. (2002) used self-report, interviewer ratings, and reference ratings of personality.

Cadets completed the Canadian adaptation of the Assessment of Background and Life Experiences (ABLE). The US Army developed the ABLE specifically for use in military selection. The ABLE measures six personality factors including: Surgency; Achievement; Adjustment; Dependability; Agreeableness; and Locus of Control. Cadets were also interviewed by one or two officer(s), who completed personality ratings of the cadets based on ABLE constructs. As well, cadets were required to submit two letters of reference during the application process. These references were contacted and also asked to complete personality ratings of the cadet based on ABLE constructs. When there were either two officers or two referees rating a given cadet, the ratings were averaged. To measure leadership at the end of the course, Bradley *et al*. (2002) used the cadet's overall performance in the course, his or her specific leadership grade, instructor ratings of leadership, and peer ratings of leadership. To measure leadership four years later, the authors examined the number of leadership appointments the cadet held in his or

her third and fourth years, a physical fitness grade, an overall military grade, and cadets' self-ratings on the Multifactor Leadership Questionnaire (MLQ).

Cadets' overall performance in the course was significantly related to their own self-reported locus of control (r = .15) and internal control (r = .16). No other self-reported dimensions of personality predicted cadets' overall performance in the course or their specific leadership grade. Self-reported Locus of Control (r =.18) and Internal Control (r = .20) were also significantly correlated to instructor ratings of leadership. Self-reported ABLE dimensions of Surgency (r = .20), Dominance (r = .23), Achievement (r = .18), and Energy Level (r = .18) were significantly correlated with peer ratings of leadership.

Interview ratings of cadet personality were not useful in predicting cadets' overall performance in the course, their specific leadership grade, or instructor ratings of their leadership. Interviewer rated cadet personality dimensions of Surgency (r = .19), Dominance (r = .18), Energy Level (r = .16), and Locus of Control (r = .16), however, were significantly correlated with peer ratings of leadership. Reference rated cadet personality dimensions of Surgency (r = .21) and Dominance (r = .22) were related to the cadets' overall performances in the course.

At Time 3, four years later, the authors examined only those dimensions of the self-reported measure of personality that had previously been significantly correlated with leadership at Time 2. Cadet ratings of Dominance, Energy Level, and Internal Control were all predictive of measures of leadership at Time 3. Dominance was significantly related to cadets' physical fitness grade (r = .39), overall military grade (r = .28), and self (r = .48) and peer ratings (r = .31) on the MLQ. The authors reported the unexpected relationship between Dominance and transformational leadership style. Although this relationship seems counterintuitive, following a review of the Dominance items in the ABLE, the researchers reported that the items on the Dominance scale are not inconsistent with being a transformational leader. Energy Level also correlated with self ratings (r = .40) on the MLQ and Internal Control was negatively correlated with cadets' own ratings of management by exception (r = -.30).

The authors reported that the cadets' self-reported Dominance and Energy Level dimensions of the ABLE were most consistently correlated with the leadership criteria. Overall, cadets' self-ratings of Dominance was the best predictor of leadership performance in the investigation. Bradley *et al.* proposed that: *"the use of personality measures in the selection process could, potentially, contribute to developing a more comprehensive description of applicants and be a useful predictor of leadership"* (p. 98).

Bradley *et al.* (2002) employed multiple criteria to assess leadership skills in officer cadets. In order to evaluate the average effect size for each personality variable on the ABLE, the current authors undertook a meta-analysis of Bradley *et al.*'s results. For this analysis, only the data for cadets' self-ratings on the ABLE and their performance during BOTC were considered (N = 174 cases). Effectively, the meta-analysis was performed on the data in Table 1 from Bradley *et al.*'s (2002) study (see Table 2 below). In addition, the results were only examined for whole scales and not subscales. For the meta-analysis, the direction of the correlation (sign) was again ignored. Table 2 reports the means of the absolute value of the correlation (uncorrected) for each of the six ABLE scales, averaged across six leadership criteria. In addition, the correlation

corrected for unreliability in the predictors is reported. Finally, the homogeneity tests in Table 2 are all non-significant, indicating that the results for each personality scale on the ABLE are consistent across all of the leadership criteria.

Table 2

**Summary Table for Meta-Analysis of
Bradley et al.'s (2002) Study**

ABLE Scale	Mean | r |	Corrected r	Significance	Homogeneity Test
Surgency	.11	.13	p < .001	$\chi^2 = 2.35$, df = 5, n.s.
Achievement	.06	.06	p < .05	$\chi^2 = 3.45$, df = 5, n.s.
Adjustment	.10	.11	p < .001	$\chi^2 = 2.43$, df = 5, n.s.
Agreeableness	.06	.07	p < .05	$\chi^2 = 0.62$, df = 5, n.s.
Dependability	.04	.05	n.s.	$\chi^2 = 0.89$, df = 5, n.s.
Locus of Control	.12	.14	p < .0001	$\chi^2 = 1.81$, df = 5, n.s.

Summary of Personality and Leadership within a Military/Police Context

The research on the relationship between personality traits and effective military leadership has produced equivocal results (Lau, 1998). Studies have reported a variety of personality traits as important predictors of leadership in a military setting. Thomas (1999) reported that Ambition was most predictive of overall cadet evaluation scores. Sociability was also related to the cadet evaluation scores; more sociable cadets were evaluated more favourably. Lall, *et al.* (1999) evaluated the personality characteristics of third-year midshipmen at the US Naval Academy. Midshipmen with the highest-class rankings were reported to have higher scores on the HPI scales of Ambition, Intellectance (Openness), Prudence, and School Success. Atwater *et al.* (1999) reported that cognitive ability, physical fitness, and prior influence experiences were significant predictors, accounting for unique variance in leader emergence. The significant predictors of leader effectiveness were physical fitness and prior influence experiences. Bradley, *et al.* (2002) found that cadet ratings of Dominance, Energy Level, and Internal Control were most predictive of leadership four years later.

Lau (1998) reported that personality traits are more strongly related to leadership emergence than to leadership effectiveness. The relationship between traits and the emergence and effectiveness of leadership is significantly influenced by situational factors. Lau proposed that there is no single trait or list of traits that alone determine whether or not someone will make a good military leader because traits vary in their importance depending upon the situation. Lau stated: "*Key leadership skills involve the ability to correctly diagnose relevant situational factors and the ability to be flexible in changing one's leadership style to maximize performance*" (p .59).

There is also a significant amount of research that indicates that military leadership styles tend to be inflexible and that leaders in this setting rely on one primary leadership style and are not comfortable utilizing alternative approaches (Cook 1992; Valentine, 1994). Walker (1997) also reported that military officers tend to have difficulty with change and are not as concerned with the human element in organizations. This finding will certainly be of interest in selecting new

officers for leadership positions as the type of leadership required for traditional wartime efforts is no longer sufficient or appropriate in a peacetime military. Lau (1998) reported that effective military leaders must be flexible in their approaches to leading in complex and ambiguous circumstances.

E. OTHER VARIABLES & FUTURE RESEARCH

Honesty and Integrity

It seems reasonable to infer that the assessment of honesty and integrity may be valuable for the prediction of effective leadership, especially in a security context such as in policing and the military. These two specific characteristics would also seem to be components of a more general domain of ethical behaviour. In the context of employment selection, it is worthwhile to actually predict counterproductive work behaviours such as: employee theft & unauthorized giveaways, lateness, unjustified absenteeism, loafing, turnover, on-the-job substance abuse, driving delinquency, sabotage, and violations of security, confidentiality, & safety regulations. There is a fairly long tradition of assessing integrity in employment situations with paper-and-pencil tests (see Jackson, Wroblewski, & Ashton, 2000 for a review of this literature). Two general approaches have been taken, using either *overt tests* (asking direct questions about offending behaviours) or *personality-oriented tests* (predictive of offending behaviours). Both approaches, however, have proved problematic. Overt tests are more susceptible to faking, whereas some personality-oriented tests have actually employed deception to prevent faking. A more recent approach taken on the *Employee Screening Questionnaire* (ESQ) has attempted to mitigate these problems by employing a forced-choice item format (Jackson *et al.*, 2000). Jackson and his colleagues (2000) showed that the forced-choice item format used on the EQS was less susceptible to faking and more predictive of workplace delinquency behaviours than were traditional integrity measures.

Given recent events in the Canadian military, such as the Somalia incident, it is understandable that there may be some interest in assessing honesty and integrity in potential military leaders, and indeed in military personnel in general. In response to this need, the Canadian Forces (CF) has already undertaken some research on ethical issues in leadership. For instance, MacLennan and Rossiter (1999; see also MacLennan & Rossiter, 2001) analyzed a survey of ethical and leadership issues in Canadian military operations during the 1990's. This study was based, in part, upon a model of ethical decision-making in organizations developed by Kelloway (1999), also under sponsorship of the CF. MacLennan and Rossiter's (1999) analysis revealed that the largest component for officers' ethical decision-making was a factor of *individual morality*. This factor emphasized freedom to exercise individual judgment in decision-making, and was consistent with Kelloway's (1999) model. The items comprising this factor assess the need and desire to make decisions based on one's own sense of morality and the leeway to act on those decisions. Given the relative importance of *individual morality* in decision-making, it would seem to be valuable to investigate the implications of individual differences on this factor for potential military leaders.

A recent study conducted in the CF and published in the peer-reviewed, scientific literature may shed light on some of these implications. Klammer, Skarlicki, and Barclay (2002) investigated

the effect of intergenerational differences on the construct of *civic virtue*. Civic virtue includes behaviour such as: keeping informed on organizational goals, suggesting improvements, and willingness to speak-out and identify potential problems in an organization (sometimes called *whistle-blowing*). Civic virtue would also seem to be a construct consistent with *individual morality*. Interestingly, Klammer *et al.* (2002) found that civic virtue was mediated by generational differences between CF members of different ages. In particular, the civic virtue of older "baby-boomers" was influenced more positively if they felt that they were being "heard" by the senior leadership, whereas there was no such constraint on the civic virtue of younger "generation-Xers".

Assessment of *integrity* and *honesty*, as components of ethical behaviour, would be useful for the screening potential military leaders, and perhaps for all military personnel in general. This may also have important implication for identifying security risks in a military context. *Civic virtue* should be encouraged in organizations, and indeed may serve as a safety mechanism against developing serious organizational problems. CF members reflect the cultural diversity of Canadian society and, given some commonality in our core values, *individual morality* should be entrusted more in decision-making. This may not be consistent with the operation of a traditional autocratic, hierarchical organization, but it is more consistent with the views of contemporary Canadian society, especially for the younger generation. Potential military leaders need to have a greater awareness of ethical issues governing their own and their subordinates' behaviour. A recent review of the research literature on military leadership and ethics was commissioned by the Canadian Forces Leadership Institute (CFLI), and authored by Pfeifer & Owens (2002). In addition, CFLI sponsors an annual conference on *Ethical Leadership* at the Royal Military College in Kingston, Ont., which currently is in its 4th year.

Stress Tolerance

On May 4th 1982 shortly after 11 am, during the Falkland Islands war, the British destroyer HMS SHEFFIELD was struck by an Exocet missile fired by an Argentine Super Etendard jet aircraft. Hitting amidships, the warhead did not explode, but the impact and unused fuel started uncontrollable fires onboard. The SHEFFIELD's fire control main had also been breached and all power was lost. Petty Officer (Marine Engineering Mechanic) David Richard Briggs was in the vicinity of the After Section Base and set in motion the initial manual fire-fighting effort. He then moved forward to his action station at the Forward Section Base, but at this stage personnel were being evacuated from this area on to the forecastle. However, he led his team back to recover important equipment, which was necessary to continue the fire-fighting operation. Unable to wear breathing equipment due to restricted access through a hatch, Petty Officer Briggs and his team re-entered the smoke-filled forward section. In conditions of increasing smoke and almost no visibility, Petty Officer Briggs made several journeys to the Forward Section Base to pass out much valuable equipment. Sadly on the last attempt he was overcome by smoke and rendered unconscious, subsequent attempts to revive him proving unsuccessful.

> Petty Officer Briggs demonstrated leadership, bravery and devotion to duty in trying to save his ship and crew. He was posthumously awarded the Distinguished Service Medal by Queen Elizabeth. [Excerpted from the citation for the DSM].

The ability to cope in stressful situations is the hallmark of an effective military leader. Military personnel are often involved in life-and-death situations, either through engagement with other combatants or even accidentally through "friendly fire". During times of crisis, subordinates need to be able to turn to their superiors for effective leadership and expedient, decisive action. As can been in the above account, these characteristics very much describe the leadership qualities of Petty Officer Briggs, who made the ultimate sacrifice with his efforts.

A major question with respect to coping with stress is whether or not it can be learned, or if some individuals are inherently resistant to stress (*stress tolerant*). There is now extensive research in the scientific literature indicating that mechanisms for coping with stressful situations can be learned through practical experience. One classic study by Lazarus and Alfert (1964) illustrates how cognitive-reappraisal through *stress inoculation* can lessen the impact of a stressor. They showed a group of male college students a film on a passage-of-rite ceremony for a primitive aboriginal group, which involved a painful and bloody circumcision procedure. The film was shown under three conditions: (1) no narration, (2) concurrent narration, and (3) prior narration, where the passage-of-rite was fully explained and it was also indicated that the boys involved were honoured to participate. Physiological stress of the viewers was highest under the first condition of no narration, and lowest under the last condition of prior narration. Being provided with prior information helped the viewers to anticipate the stressor and to cognitively cope with it better.

A meta-analysis of research on stress inoculation training has revealed that such training is generally effective in reducing anxiety in stressful situations, as well as enhancing task and job performance under stress (Saunders, Driskell, Johnston, & Salas, 1996). In a military context, stress inoculation training has been found: (1) to better prepare Israeli male adolescents for compulsory military training (Israelashvili & Taubman, 1996), (2) to help a single undergraduate pilot better cope with training stress (Baken & Mahone, 1991), (3) to be an effective stress management tool for police (Digliani, 1995), and (4) to prevent post-traumatic stress disorder (PTSD) following military operations (Armfield, 1994). Some studies have not yielded statistically significant results for stress inoculation in military populations, however, this was attributed, by the authors of the reports themselves, to the small samples employed in these studies (e.g., Cigrang, Todd, & Carbone, 2000; and Crago, 1995).

In addition to training military personnel to better cope with stress, some individuals may have internal dispositional factors that better enable them to cope with stress inherently. In the scholarly literature this has been referred to at various times as: *ego strength, psychological hardiness*, *stress resistance*, and *stress tolerance*. In a longitudinal survey, Holahan and Moos (1986) identified some factors that make individuals more resistant to stress, including: competence at problem-solving, self-confidence, disinclination to use avoidance as a coping mechanism (perseverance), availability of social support (from family & friends), an easy-going disposition, and a sense of humour (sometimes even using "black" humour to cope).

There have been several research studies on stress tolerance in military settings, especially with pilots. O'Hare (1997) found that elite soaring pilots performed better on a computer-based test of stress tolerance designed to assess coping with informational overload (called the WOMBAT), than did a group of average pilots and non-pilot control subjects. In two studies of Finnish Air Force pilots, Leino and his colleagues found that student pilots who showed less physiological arousal (as assessed by several indices) than other pilots, performed better on psychomotor tasks and during actual IFR flight performance (Leino, Leppaeluoto, Ruokonen, & Kuronen, 1999a; and 1999b). Two other studies have employed the Rorsach Inkblot test to investigate the role that stress tolerance played in the development of PTSD in Vietnam War veterans (Goldfinger, 1999; Swanson, Blount & Bruno, 1990). Most recently, stress tolerance has also been considered an important component of *emotional intelligence*, as assessed by the Bar-On *Emotional Quotient Inventory* (EQi; Bar-On & Parker, 2000; also see following section). Further research on stress tolerance may aid in identifying potential military leaders who may be more effective in performance of their duties, especially in dealing with crisis situations. In addition, stress tolerance may be an important variable for identifying individuals less susceptible to developing PTSD from military operations.

Emotional Intelligence and Leadership

The role of intelligence in effective leadership is a question that has been researched as far back as at least the 1920's (Hogan & Hogan, 2002). The question of whether or not more intelligent leaders were more effective has been asked for many years. The early research suggested that intelligence did contribute to leadership; leaders were found to be more intelligent than their followers, and intelligence consistently correlated with perceptions of leadership (Bass, 1990; Lord, DeVader, & Alliger, 1986). However, the scope of this investigation has since shifted to include the variable of context. It is now known that context must be considered when examining the role of intelligence in leadership ability. For example, Hollingworth (1926) found that if the differences between leaders' and followers' intelligence were too great, followers did not identify with the leader, which presumably interfered with the effectiveness of the leader. The early research greatly emphasized the role of academic intelligence such as the traditional IQ-based notions of intelligence; however, this literature was notoriously ambiguous (Aditya & House, 2002).

Also considered important in the investigation of leadership ability were the concepts of social insight, tact, and emotional maturity (Bass, 1990). Emotional maturity has transformed into Salovey and Mayer's concept of emotional intelligence (Mayer & Salovey, 1993; Salovey & Mayer, 1990). In the present it is widely accepted that there are multiple facets of intelligence (Morand, 2001). Social intelligence, practical intelligence, and creativity are thought to play a role in mediating successful leadership; however, research exploring the connections between multiple intelligences and leadership has only begun recently. This section will introduce the construct of emotional intelligence (EI) and will focus primarily on the contribution of emotional intelligence to the understanding of effective leadership. Given the formative stage of this area of investigation, this discussion is predominantly theoretical rather than empirical in nature.

The investigation of emotional intelligence has largely been fuelled by the inability of Intelligence, as measured by IQ tests, to account adequately for the variability in success criteria

in both educational and organizational contexts. One of Goleman's (1995) central contentions was that individuals who have a strong balance between IQ and emotional intelligence are more successful in their chosen fields than are those who have outstanding IQ but less developed emotional intelligence. Goleman (1995) described emotional intelligence as having three core components: (1) an awareness of one's own emotions and the ability to not become overwhelmed by them; (2) the ability to motivate one's self to complete tasks, to be creative, and to perform at her or his peak; and (3) the ability to sense what others are feeling and to handle interactions and relationships effectively. The concept of emotional intelligence is stated to be based on extensive scientific and research evidence (e.g., Cooper, 1997; Cooper & Sawaf, 1997; Goleman, 1996). However, Dulewicz & Higgs (2000) report that the majority of the research has been based on physiological research developments, education-based research, and developments in the field of therapy. There has been minimal research conducted in the organizational context; however, there appears to be a sound acceptance of, and understanding of the link between emotional intelligence and leadership effectiveness. The following models assist in clarifying the relationship between these two constructs.

Models of Emotional Intelligence
There are two fundamental, broad approaches to emotional intelligence: an Ability Approach and a Mixed Approach. From the Ability perspective, emotional intelligence is viewed as a set of cognitive capabilities or competencies. In the Mixed Approach, emotional intelligence combines abilities with a broad range of personality traits. Mayer and Solovey (1993) define emotional intelligence as the ability to perceive emotions, to access and generate emotions that assist thought, to understand emotions and emotional knowledge, and to regulate emotions so as to promote emotional and intellectual growth. Thus, there are four branches of the Ability Model: (1) Identifying Emotions; (2) Using Emotions; (3) Understanding Emotions; and (4) Managing Emotions. *Identifying emotions* involves several skills including the ability to identify feelings and to express them accurately, and the ability to judge the authenticity of expressions of emotion. *Using emotions* involves the ability to redirect attention to important tasks, to generate emotions that facilitate decision-making, to use different moods to examine different points of view, and to use different emotions to facilitate different approaches to problem-solving. *Understanding emotions* involves the ability to understand not only emotions, but also *emotional chains,* or how emotions evolve from one form into another. Understanding emotions also involves recognizing the causes of emotions and how different emotions are related to each other. The fourth and final branch of the Ability Model, *Managing Emotions*, involves the ability to have an ongoing awareness of one's own emotions, to determine whether or not emotions are reasonable, and to solve emotion-laden problems without necessarily suppressing negative emotions. An examination of emotional intelligence using the Ability Model would involve the assessment of performance on all aspects of these four branches of emotional ability. The Ability Model of emotional intelligence is a skill-based model that focuses on how emotions can facilitate thinking and adaptive behaviour. There is no direct focus on disposition or personality traits from this theoretical perspective; however, this model affords the objective measurement of emotional intelligence as conceptualized as a set of abilities. There is some evidence to support this model and some authors believe that it provides insight into the understanding of, and the prediction of effective leadership (Caruso, Mayer, & Salovey, 2000).

The Mixed Model of emotional intelligence is based upon the Ability Model but includes other psychological attributes as well. Goleman's original conceptualization of emotional intelligence included five components: knowing one's emotions, managing emotions, motivating one's self, recognizing emotions in other people, and handling relationships. His ideas were expanded to include 25 competencies subsumed under the same five domains, although these domain categories acquired new labels. The first category was *Self-awareness*, and included competencies in the areas of emotional awareness, accurate self-assessment, and self-confidence. *Self-regulation* was the second category and included the abilities of self-control, trustworthiness, conscientiousness, adaptability and innovation. *Motivation*, including the competencies of achievement, commitment, initiative and optimism, was the third category of competencies. The fourth category was *Empathy*, which involved understanding others, helping others develop, service orientation, diversity, and political awareness. The final category, *Social Skills*, included competencies in the areas of influence, communication, conflict management, leadership, change catalyst, building bonds, collaboration and co-operation, and team capabilities.

Goleman, Boyatzis, and McKee (2002) further refined these components into four domains and 18 underlying competencies that are key to emotional intelligence. Table 3 lists these domains and their related competencies. The self-awareness and self-management domains of emotional intelligence involve personal competencies, those abilities that determine how people manage themselves. Self-awareness involves being aware of one's emotions, being able to assess one's strengths and limitations, and being aware of one's values, goals, motives, and sense of self-worth. Self-management involves a variety of abilities that ultimately contribute to a focused drive to achieve goals. It is hypothesized that leaders who have strong self-management skills are able to control their own disruptive emotions and impulses, display honesty and integrity, and to be adaptable and flexible in situations that call for change. They are driven to improve their performance in order to meet an inner standard of excellence, are ready to seize opportunities, and are able to see the positive side of difficult situations (Goleman, Boyatzis, and McKee, 2002).

The social-awareness and relationship-management domains involve competencies that determine how people function within relationships. Social-awareness includes the capacities to be empathic, to sense and understand others' emotions, and to take an active interest in their concerns. Also involved is an awareness of organizational structures and political frameworks, and a recognition of the needs of subordinates, clients, or customers. Subsumed under the domain of relationship-management are the abilities to guide and motivate with vision, to use a variety of persuasive tactics to meet common goals, to guide and empower others, to effectively initiate change and manage conflicts, to cultivate and maintain a network of relationships, and to build and maintain a co-operative team. Although these domains and related competencies are discussed as separate abilities, another key factor in effective leadership is the ability to integrate these skills and utilize them in a well-orchestrated manner (Goleman, Boyatzis, and McKee, 2002).

Table 3

Domains and Related Competencies of Emotional Intelligence

Domain #	Domain Name	Related Competencies
1	Self-awareness	ϖ Emotional Self-awareness ϖ Accurate Self-assessment ϖ Self-confidence
2	Self-management	ϖ Emotional Self-control ϖ Transparency ϖ Adaptability ϖ Achievement ϖ Initiative ϖ Optimism
3	Social Awareness	ϖ Empathy ϖ Organizational Awareness ϖ Service
4	Relationship Management	ϖ Inspirational Leadership ϖ Influence ϖ Developing Others ϖ Change Catalyst ϖ Conflict Management ϖ Building Bonds ϖ Teamwork and Collaboration

There are several notable strengths of the Mixed Model of emotional intelligence. In this model it is asserted that emotional intelligence is comprised of a constellation of a multitude of traits, many of which clearly have face validity. In addition, Caruso, Mayer, and Salovey (2000) assert that this model affords tremendous predictive utility, accounting for considerable variance in "life success". Of note, however, is that these authors did not examine how this explanation of variance in terms of general life success translates into success in the leadership role.

Caruso, Mayer, & Salovey (2000) stated a preference for the ability model and believe that this model facilitates new understanding of the relationship between emotional intelligence and leadership. More specifically, they believe that investigation through the use of this model allows for an understanding of how leaders manage their emotions and the emotions of others in order to achieve results. This model is best understood by relating the components to the tasks that leaders perform. Leadership involves influencing others in order to achieve a goal. Those who are the most effective in impression management are more likely to succeed. People who are able to read those around them and decipher what action or reaction will be interpreted most favourably in any given situation tend to get ahead of those who lack those skills. More specifically, leaders need to be able to identify their own emotions and those of the members of the group that they are leading. Individuals in leadership positions need to be able to use emotions to be attuned to which tasks they should carry out when, to motivate people, and to understand multiple perspectives in order to facilitate effective planning and generation of ideas.

Abrade and Gibson (1998) discussed the concept of "Emotional Contagion", or spreading emotion through a group of people. Emotional contagion is believed to increase group cohesion and co-operation. Understanding emotions involves recognizing relationships between emotions, and the meaning and origin of emotions. Understanding the emotions that drive group members is essential if a leader is to facilitate a cohesive and motivated group of followers. Effective leaders need to be able to manage their emotions so that decisions can be informed by emotional responses rather than dictated by them. Ideally emotions serve to draw attention to an underlying problem and assist in the reconciliation of that problem through examining the cause of the emotion, rather than allowing the emotional response to become a problem in itself.

It has been proposed that transformational leadership has its roots in managing emotions. Authors of a recent study (Sosik & Megerian, 1999) examined the relationship between emotional intelligence and leadership. These authors hypothesized that aspects of emotional intelligence would be related to transformational leadership. Specifically, Sosik and Megerian asserted that self-awareness would moderate the relationship between transformational leadership behaviour and managerial performance. They found that purpose in life, personal efficacy, interpersonal control and social self-confidence, aspects of emotional intelligence, were related to transformational leadership in the self-aware leaders. These results offer some support for the relationship between emotional intelligence and this style of leadership.

Measuring Emotional Intelligence
Another reasonable question is "Should emotional intelligence be used to select leaders?" It can be safely stated that, indeed in some ways, it already is. The use of behavioural interviews to judge leadership candidates in terms of whether or not they are competent to lead teams and organizations is an indirect means of measuring emotional intelligence. There appears to be consensus, however, that emotional intelligence is difficult to measure and that no robust measure exists to date, although the quest for such continues (e.g., Goleman, 1996; Hein, 1997; Steiner, 1997). Of course, it is difficult to include emotional intelligence as a selection criterion if it cannot be effectively measured. It is doubtful that this type of intelligence will be best captured by any paper-pencil measure (Dulewicz, & Higgs, 2000). It has been proposed, however, that ability-based measures can add a useful and unique component to the selection process (Caruso, Mayer, & Salovey, 2002). Although senior staff in many organizations are often reluctant to submit to typical pre-employment screening such as personality inventories, these authors suggest that most managers, and leaders in general, realize the important leadership function of being able to 'read people' and are likely to be more accepting of the use of an assessment tool that measures such in the selection process (Caruso, Mayer, & Salovey, 2002).

If one accepts the tenets of the ability model, that EI is comprised of a set of skills or abilities, then it is best to measure this construct through the use of a set of ability-based or performance measures. There is literature to support the assertion that emotional intelligence, conceptualized as an ability, can be reliably measured and has both divergent and convergent validity (e.g., Mayer, Caruso, & Salovey, 1999; Mayer, DiPaolo, & Salovey, 1990; Mayer, & Geher, 1996). Initial research on one measure, the Multifactor Emotional Intelligence Scale (MEIS; Mayer, Salovey, & Caruso, 1997) has demonstrated internal consistency and adequate content validity and construct validity (Caruso, Mayer, & Salovey, 2002). Ability measures would be used with the intent to directly measure emotional skills. For example, a subtest of the MEIS that measures

Identifying Emotions involves the test taker identifying the specific emotional content evident in the presentation of a face, and indicating the degree of that emotion on a five-point scale. A subtest that measures the Management of Emotions presents the test taker with an emotional problem, such as how to cheer up someone who is sad, and asks the test taker to rate the effectiveness of various alternatives (e.g., *"eating a big meal"*; *"taking a walk alone"*). If selection decisions are to be based, in part, on the emotional skills of candidates, the specific skills that are necessary and appropriate for particular positions must be identified when making decisions about which selection criteria to use, and the subsequent development of the assessment protocols.

Can Emotional Intelligence Be Taught?

If one ascribes to a mixed model of emotional intelligence, these skills are conceptualized as emotional competencies and can be learned (Caruso, Mayer, & Salovey, 2002). Proponents of the Abilities Model would reframe this statement and assert that emotional skills and knowledge can be developed. In fact, there is a consensus in the literature that emotional intelligence, as conceptualized as a set of skills, can be developed through teaching (e.g., Cooper, 1997; Goleman, 1996; Steiner, 1997). Although several core emotional capabilities are developed in childhood, many of these competencies are pliable and can be developed and changed (Hopfl & Linestead, 1997). Executives have successfully been taught how to recognize verbal and non-verbal emotional signals in others (Dulewicz & Higgs, 2000). Executive coaching programs have been devised to enhance the social and emotional skills of managers, and anecdotal evidence suggests that these skills not only can be taught, but also can have a tremendous influence on leaders and on organizations (Dulewicz & Higgs, 2000). These programmes typically couple formal instruction on emotions with hands-on training methods such as role-playing (Dulewicz & Higgs, 2000).

Emotions and Traits

Emotional intelligence is also related to many of the traits that have been posited to be related to effective leadership. Trait models of leadership examine specific personality attributes that are thought to underlie leadership ability (e.g., Bass, 1985, 1997; Fiedler, 1967; Hogan, Curphy, & Hogan, 1994; Sternberg, 1997; Stogdill, 1974). As previously discussed, hundreds of personality traits have been identified as related to effective leadership ability including, for example, intelligence, extraversion, dominance, masculinity, adjustment (Lord, *et al*., 1986); drive, motivation, honesty, self-confidence, cognitive ability, knowledge of the business (Kirkpatrick & Locke, 1991); sociability, ambition, and perseverance (Porter, Lawler, & Hackman, 1975). To date no studies have examined the empirical relationship between the Big Five and Goleman's definition of Emotional Intelligence; however, Goodstein (1999) asserted that when examined at face value, the five factors of personality clearly overlap with many of the characteristics encompassed in Goleman's definition of emotional intelligence (1995). Self-awareness appears to involve high Extraversion and low Neuroticism. Self-regulation is comprised of high Openness to Experience coupled with low Neuroticism. Motivation seems to be best captured by both Conscientiousness and Extraversion. Goodstein (1999) stated that Empathy and Social Skills both seem to be tapped by Agreeableness and Extraversion.

In sum, the relationship between emotional intelligence and leadership makes intuitive sense, and both the ability and mixed models afford some clarity of conceptualization for this construct. These models also facilitate and promote the pursuit of developing means by which to both measure emotional intelligence, and to develop emotional intelligence. The construct does not yet have the support of a large body of literature; however, the literature that has been published is encouraging and future efforts are bound to focus more heavily on this topic in general, and more specifically on how it relates to the prediction of leadership potential.

F. ISSUES AND LIMITATIONS OF THE LITERATURE

Job Analyses

Goodstein and Lanyon (1999), and Tokar, Fischer, and Subich (1998) proposed that, given the variability in skills required for success in various occupations, job analyses need to be completed to identify the personal and interpersonal requirements for success. To expect any personality trait to be an effective predictor of job performance it must be meaningfully related to the requirements of the position. It therefore should be expected that exploratory studies would provide lower correlation coefficients than studies that have chosen measures based on a prior rationale for the relationship between personality and the performance criteria (Bradley *et al.*, 2002). Future researchers should select personality trait and criterion measures that are theoretically linked. Given that many meta-analyses completed to date have not differentiated those studies that have theoretically or empirically linked personality traits and job performance and those that have not, significant personality and job performance correlations may be masked or minimized. As Goffin, Mitchell, & Johnston (2000) suggested, the practice commonly used in meta-analyses of cumulating results across studies using various measures of personality and combining both confirmatory and exploratory studies may obscure differences in validity. The actual potential of personality tests to predict job performance may be underestimated.

Explanatory Models

Connelly, Gilbert, Zaccaro, Threlfall, Marks, and Mumford (2000) proposed that future leadership research needs to move beyond investigating simple bivariate correlations and examine comprehensive explanatory models of leadership. These models should include investigations of mediator variables and examine which personality traits are predictive of leadership performance in different situations for different occupational groups. The authors suggested that environmental influences could have a direct influence on leadership performance given the environment's potential to minimize or maximize leader behaviour and skill utilization.

Ethics

Like all assessments used to select employees, to measure their performance, or to predict their potential future performance, the use of personality measurement for the prediction of leadership abilities requires a careful consideration of ethical issues. These considerations are complex, organization specific, and include all parties involved (Hough & Oswald, 2000). Ideally, organizations should be able to justify the use of a particular measure in predicting leadership with sound psychometric data. Issues of differential profiles for specific groups of individuals

(e.g., women, minorities) will also need to be reviewed and addressed if necessary. Hough and Oswald (2000) reported that research to date indicates that personality variables have little adverse impact against minorities. This finding is encouraging. Both Lowman (1998) and Jeanneret (1998) provide useful reviews of the ethical issues involved in assessment and the prediction of workplace behaviours.

Cultural Implications in the Assessment of Leadership and Personality

In his comprehensive study, Silverthorne (2001) investigated the use of the Five Factor model in Western versus non-Western cultures in order to assess the universality of its application to personality assessment for the purpose of leader selection. There is reason to believe that the five dimensions of personality tapped by the NEO PI-R are not stable across all cultures. For example, Conscientiousness is highly valued in the Chinese culture, but some aspects of Assertiveness and Dominance are not (Silverthorne, 2001). Silverthorne (2001) compared samples of effective and non-effective leaders (as identified by their supervisors) in the United States, the Republic of China (Taiwan), and Thailand. He found evidence that supported the relationship between the five-factor model of personality in the US sample. Four of the five factors were related to leadership effectiveness in the Republic of China sample. Only two of the factors were related for the Thailand sample.

Effective and non-effective leaders scored differently on each of the five factors in the U.S. sample. Effective leaders were more emotionally stable, more extraverted, more open to experience, more agreeable, and more conscientious than were the non-effective leaders. In addition, effective leaders were found to consistently score low on neuroticism while less effective leaders consistently scored highly. The Neuroticism scale had the strongest relationship to leader effectiveness of the five factors. These results do not provide a guarantee that possessing these traits will necessarily lead to effective leadership; but the author asserted that they do suggest that the presence of these factors indicate leadership potential. Prospective studies would provide a clearer indication of whether or not these traits are prerequisites to effective leadership, or whether they are acquired once in a leadership position (Silverthorne, 2001).

In the Republic of China sample, effective and non-effective leaders differed on the Neuroticism, Extraversion, Agreeableness, and Conscientiousness scales but not on the Openness scale. The differences were strongest on the Neuroticism and Conscientiousness scales. It has been suggested that this finding is in keeping with Confucian philosophy, wherein social order, proper behaviour, and relationships are emphasized (Redding & Wong, 1986; Silverthorne, 2001). The importance in the Chinese culture of following social rules and traditions appears to clarify this finding (Punnett, 1995; Silverthorne, 2001). Social and moral attitudes that reflect openness to experience may be different in Chinese culture and, thus, the utility of the Openness factor in assessing leadership in the Chinese population is questionable.

In the Thai sample, only Neuroticism and Extraversion yielded statistically significant results; and the differences on the Extraversion scale were less dramatic than they were in the other samples. One difference in methodology between the Chinese and Thai samples is that the Chinese sample used the Chinese version of the NEO PI-R, whereas the Thai sample, although

fluent in English, used the English version. This may, in part, explain the limited results in the Thai sample. This study touched upon the important and emerging issue of cross-cultural applications of the study of leadership in general, and leadership and personality specifically. Given the multicultural nature of the Canadian context in general, these results are of tremendous import and further research needs to be conducted to elucidate any necessary differences in assessing and predicting leadership potential in CF personnel of varying ethnic backgrounds.

Psychometric Properties

Rothstien and Goffin (2000) reviewed the common criticisms of personality testing used in the prediction of personnel selection, performance and leadership. The authors identified psychometric problems with some of the personality assessments, rendering them incapable of reliably predicting job performance. It is important to know the overall reliability, as well as the individual scale reliabilities for the measures in a given study.

Social Desirability
When using personality assessment in the context of personnel selection or advancement, it is essential to consider the important issue of social desirability. As Tett, Jackson, and Rothstein (1991) noted, caution should be employed when selecting personality measures, as many of the scales are highly susceptible to faking. In an attempt to assess the issue of faking, Tett *et al.* (1991) examined, in a meta-analysis, differences between studies of recruits and those using employees as a sample. The authors proposed that recruits would be more motivated to fake and, therefore, studies of recruits could be expected to have lower reliabilities compared to studies of employees. The authors found, however, that studies using recruits actually had significantly higher validities. Based on this finding, Tett *et al.* concluded that faking did not reduce the personality assessment validities in their review.

Importance of Multiple Sources
Conway, Lombardo, and Sanders (2001) outlined the importance of including multiple sources in the prediction of the performance criteria. These authors examined the validity of subordinate and peer ratings in job performance. They found that both subordinate and peer ratings accounted for significant variance in objective measures. They reported that low between-source correlations were related to the unique variance predicted by different raters (self, supervisor, subordinate, and peer). It has also been demonstrated that both self and other reports of personality are useful in predicting some components of work place behaviour. In fact, Mount, Barrick and Strauss (1994) found that others' ratings of personality were better predictors than self-reports.

Range Restriction
Bradley *et al.* (2002) also noted the limitation of a restriction of range in many of the military and police studies. They suggested that both the predictors and the criteria might be influenced by this restriction. Personality predictors may be limited given that individuals who are interested in military and police work may share many similar traits and interests. Furthermore, long before the evaluation of job performance or leadership abilities of these employees, an extensive amount of prior selection would have taken place. This extensive selection would have likely significantly reduced the range of performance or leadership skill within the sample. Typically in

these police and military samples the individuals assessed are functioning adequately or better and, thus, the low end of the performance or leadership skill range is not assessed, thereby reducing the strength of the correlations.

G. DISCUSSION AND RECOMMENDATIONS

As evident from this literature review, there is strong support for the merits of using personality information for predicting leadership performance in a military context. The literature, however, is equivocal in regards to which personality measures may be more suitable for these purposes, and even more ambiguous in terms of which specific personality variables might be the most predictive of leadership effectiveness. It is perhaps too simplistic to expect such easy answers, given the multidimensional complexity of leadership behaviour in the first place. It is also clear that the context of the situation must be considered in trying to predict effective leadership (e.g., Atwater, 1988). One widely used distinction between *transactional* and *transformational* leaders would suggest that these two leadership styles would be expected to exhibit different levels of effectiveness in different situational contexts (e.g., Chemers, 2000).

Two major personality theories have shown some promise in predicting leadership performance. The five-factor model of personality (Costa & McCrae, 1992) has been shown to predictive of job performance in general (e.g., high *Conscientiousness*), predictive of leadership for several occupational groups (e.g. low *Neuroticism*), and specifically predictive of leadership in a military context (e.g., Bradley *et al.*, 2002). A second major theory of personality, based on psychological types (Myers & McCaulley, 1985), has also revealed some relationship with leadership behaviour in military settings. The most common personality profile found in samples of military leaders is the Sensing-Thinking-Judging (STJ) profile (e.g., Campbell, 1995; and Walker, 1997). Several other studies have also revealed some specific personality traits that demonstrate relatively consistent relationships with leadership, such as: *dominance*, *sociability, self-confidence, ambition*, and *intelligence*, among others.

There is considerable research to suggest that, traditionally, military leadership styles tended to be inflexible (e.g., Cook, 1992; and Valentine, 1994). This inflexibility, however, may now be inappropriate with the evolving role of militaries in contemporary society, from nationalistic forces to peacekeeping constabularies (Walker, 1997). In additional, modern militaries are becoming more technological sophisticated, which may present some challenges for their traditional leadership roles (Krembs, 1983).

Other variables that show some promise for predicting military leadership were also considered in this review, including: *honesty & integrity*, *stress tolerance*, and *emotional intelligence*. Recent innovations in assessing integrity using a forced-choice item format, may make it a useful tool for screening military personnel, especially for potential security risks. Stress tolerance has already been researched extensively in a military context, and it might also serve as a useful tool for selecting military personnel who are better able to cope in a crisis situation, and who would be less susceptible to developing PTSD from military operations. Before it can be employed for operational decisions in a military setting, further research needs to be conducted on the implications of emotional intelligence for predicting leadership, and especially the development of measures of emotional intelligence with wider acceptance in the research community.

Some suggestions and recommendations for the Canadian Forces (CF), stemming from this literature review, can be made as follows:

1. The CF should consider undertaking an extensive program of job analyses to identify relevant personality variables that would be predictive of leadership performance in different situational contexts. These job analyses might overlap with the clusters of military occupational groups that have already been identified in the CF.

2. The CF should continue to assess personality in their officer candidates. This information does not necessarily have to be employed for selection purposes. Personality information might also be relevant for officer development. Both current and future military leaders may benefit from a greater self-awareness of their own personality and leadership styles.

3. The CF should try to develop an organizational culture that accepts and even encourages greater diversity in personality and flexibility in leadership styles. The ethical values of *individual morality* and *civic virtue* should also be encouraged.

4. Leadership development in the CF should include a consideration of the evolving role of the Canadian military. New skills training may be required for future military leaders, such as in communications, human relations, counselling, and ethics.

5. Leadership development in the CF should also consider the challenges facing officers as they transition from technological specialties at the junior levels to greater leadership responsibilities at the senior levels (e.g., Krembs, 1983).

6. The CF should support an ongoing research program on both personality and leadership in officers, and perhaps even enlisted members. With greater information in both of these realms, perhaps this can facilitate the development of better personnel selection tools. In turn, this may enhance both job and leadership performance in the CF. Also, multiple measures of both personality and leadership styles should probably be employed. Psychometric problems should continue to be addressed in future research.

7. Measures of both integrity and stress tolerance might be considered as useful screening tools for military personnel in the CF. Further research needs to be conducted on emotional intelligence before it can be employed operationally.

8. Issues in the assessment of personality and leadership styles, such as potential cultural differences for minorities and women, should also be reviewed for their potential CF policy implications.

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APPENDIX A: Domains and Facets Measured by the Revised NEO Personality Inventory (NEO-PI R; Costa & McCrae, 1992)

Neuroticism:
N1   Anxiety
N2   Angry Hostility
N3   Depression
N4   Self-Consciousness
N5   Impulsivity
N6   Vulnerability

Extraversion:
E1   Warmth
E2   Gregariousness
E3   Assertiveness
E4   Activity
E5   Excitement Seeking
E6   Positive Emotions

Openness:
O1   Fantasy
O2   Aesthetics
O3   Feelings
O4   Actions
O5   Ideas
O6   Values

Agreeableness:
A1   Trust
A2   Straightforwardness
A3   Altruism
A4   Compliance
A5   Modesty
A6   Tender-Mindedness

Conscientiousness:
C1   Competence
C2   Order
C3   Dutifulness
C4   Achievement Striving
C5   Self-Discipline
C6   Deliberation