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Personality as a Predictor of Military Performance
and Counterproductive Behaviour

by

Fraser A. J. Boyes

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Approved:	Arla L. Day, Ph.D. Supervisor
Approved:	Victor M. Catano, Ph.D. Committee Member
Approved:	Debra A. Gilin, Ph.D. Committee Member
Approved:	Richard A. Boswell, M.A. External Examiner
Date:	June 27, 2005

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Abstract

Personality as a Predictor of Military Performance
and Counterproductive Behaviour

By Fraser A. J. Boyes

The current research investigates the psychometric properties of three personality
inventories: two five-factor measures (the Trait Self-Descriptive Inventory; TSD;
Christal, 1994, and the NEO-Five Factor Inventory; NEO-FFI; Costa & McCrae, 1992)
and one six-factor measure (the HEXACO Personality Inventory; Lee & Ashton, 2004).
The data from a sample of Canadian Forces (CF) recruits (N=515) and officer candidates
(N=124) attending initial military training were analyzed via confirmatory factor analysis
and hierarchical regression to assess model fit and the ability of the personality measures
to explain variance in several military job performance criteria (i.e., job performance,
including leadership for officers; contextual performance; and counterproductive
workplace behaviours) beyond the variance accounted for by cognitive ability. Results of
confirmatory factor analyses were inconsistent for the TSD versions and NEO-FFI, and
the HEXACO was generally a poor fitting model. The factors of all personality
inventories demonstrated good internal consistency and convergent validity with their
respective factors on the other measures. In hierarchical regression analyses, the
Conscientiousness factors generally predicted significant incremental variance in job
performance criteria for recruits, but not for officers. For officers, Extraversion predicted
supervisor assessments of leadership. Recommendations for the implementation of
personality testing in the CF are discussed, as are limitations and directions for future
research.

June 27, 2005

Personality as a Predictor of Military Performance and Counterproductive Behaviours

Organizations expend a great deal of resources to ensure they select and promote

the best applicants. The role of personnel selection is to determine which employee

characteristics are related to performance in order to ensure that the resources allocated to

employee training and development are invested wisely (Salgado, Viswesvaran, & Ones,

2001). Not surprisingly, the Canadian Forces (CF) is continually striving to improve its

personnel selection system in order to increase the likelihood that valuable training and

development resources are allocated to candidates who have the greatest probability of

success. Cognitive ability tests have been an important component of this selection

process and have been found to predict success in initial phases of training and

employment (Black, 1999; O'Keefe, 1999). However, the CF selection system lacks non-

cognitive predictors that assess the motivational components of military employment.

Of specific interest to the Canadian Forces is the potential for a personality

instrument to account for incremental variance in job performance, over and above that

accounted for by cognitive ability. Due to the fact that personality variables are generally

not correlated with cognitive ability (Hough & Ones, 2001), the potential for incremental

validity in the prediction of job performance is evident, particularly if personality is

predictive of job performance dimensions unrelated to cognitive ability. Although

research into the personality-performance relationship with CF samples has produced

mixed results (Jones, Uggerslev, Paquet, Kline, & Sulsky, 2000a; 2000b; O'Keefe, 1998;

O'Keefe, 1999; Schwartz, 1999), these studies have used a variety of predictor measures

as well as criterion measures of job performance, including self-reports, training

performance grades, pass/fail course outcomes, and annual Performance Evaluation

Reports. Therefore, the present study will compare the construct and predictive validity of several personality measures in terms of their ability to predict different job-related criteria, beyond what can be explained by cognitive ability.

Personality: An Overview

Personality has generally been defined in terms of the individual characteristics that help to explain or determine behaviour (Hogan & Roberts, 2001). In the context of industrial, work, and organizational psychology, research has concentrated on the degree to which personality can predict future behaviour and performance in the workplace (Hough & Ones, 2001).

Although the examination of personality would appear to be desirable in personnel selection due to the potential ability to predict workplace behaviours, personality and performance research has experienced a turbulent history, particularly during the period from 1960 through the 1980s (Hough & Ones, 2001). To a large extent, this turbulence can be attributed to the fact that a clear conceptual framework was lacking at the time (Barrick, Mount, & Judge, 2001; Hogan & Roberts, 2001). Specifically, although numerous personality assessment tools had been developed, there was little consistency in what was measured, how it was measured, and the labels that were used (Hogan & Roberts, 2001). In fact, some researchers utilized similar terminology to measure different constructs, whereas other researchers used different terminology to measure similar constructs (Hough 2001; Hough & Ones, 2001). This lack of structure hampered research and made it difficult to assess the relationships between personality and work behaviours (Hogan & Roberts, 2001). Therefore, it was not surprising that Guion and Gottier (1965) found little empirical evidence to support the presence of any

meaningful relationships between measures of personality and performance criteria in their review of studies using personality measurement for predicting occupational performance. They did, however, acknowledge the need to predict motivational, or "will do" behaviours, concluding that the inability of the personality measures studied at that time to effectively assess these types of behaviours did not eliminate the need for such measures (Guion & Gottier, 1965). Personality psychology was also criticized by researchers who believed strongly that one's behaviour was more a function of situational factors than individual differences (Mischel, 1968). Together, these criticisms damaged the credibility of personality research to the extent that it became difficult for personality and performance research to be published in APA journals or secure funding for personality-based research during the 1970s (Hogan & Roberts, 2001).

Personality resurfaced as an important individual-difference variable in the 1990s. One reason for its re-emergence was due to the fact that cognitive ability testing, although effective in predicting job performance, resulted in adverse impact within the applicant pool (Hogan & Roberts, 2001). Another, perhaps more important reason, was the emergence of the Five Factor Model (FFM), a means of categorizing personality traits into broad dimensions, which offered the potential for greater clarity and consistency in personality research (Barrick et al., 2001; Hogan & Roberts, 2001).

Five Factor Model of Personality

The Five Factor Model (FFM) originated with the belief that personality traits have been encoded into the words (i.e., adjectives) used to describe people (Goldberg, 1993). Goldberg (1993) traced this "lexical hypothesis" to Sir Francis Galton who, in the late 1800s, recognized that individual differences would present themselves in the

languages of the world and used a dictionary as a source to estimate the number of

personality traits. Although the FFM was not widely accepted until the 1990s, research

suggesting the existence of five recurring factors of personality had been conducted much

earlier (e.g., Tupes & Christal, 1961), but no significant follow-up research was

conducted for many years. Tupes and Christal (1961) found five recurrent factors of

personality when examining the intercorrelations among personality traits in studies

contracted by the US Air Force. The factors were labelled Surgency, Agreeableness,

Dependability, Emotional Stability, and Culture. Accordingly, many researchers have

credited Tupes and Christal (1961) with the identification of the FFM (Goldberg, 1993;

Hogan & Roberts, 2001; Hough & Furnham, 2001). However, because Tupes and

Christal's (1961) research was conducted within the domain of the US Air Force (and

published in the form of a Technical Report for the Air Force), it saw little exposure at

the time, and this research was not published in the public domain until 1992.

Various measures have emerged to measure the FFM, including the NEO

Personality Inventory – Revised (NEO PI-R; Costa & McCrae, 1992), NEO-Five Factor

Inventory (NEO-FFI; Costa & McCrae, 1992), International Personality Item Pool (IPIP;

Goldberg, 1999), and Trait Self Descriptive Inventory (TSD; Christal, 1994). Each of

these inventories is a self-report FFM measure of normal personality. Although slightly

different factor labels have been used across the research, the current conceptualization of

the FFM is relatively consistent. The FFM is comprised of Neuroticism, Extraversion,

Openness, Agreeableness, and Conscientiousness (Barrick et al., 2001). *Neuroticism*

involves the presence of traits like depression, anxiety, and insecurity (this factor is also

referred to as *Emotional Stability*, which has the polar opposite traits); *Extraversion* is

composed of traits like sociability, positive emotionality, and assertiveness; *Openness* includes traits such as creativity and broad-mindedness; *Agreeableness* is comprised of traits like cooperativeness, affability, and receptivity; and *Conscientiousness* is made up of traits such as dependability, goal-orientation, and planfulness (Barrick et al., 2001).

Although the conceptualization of the five factors is generally consistent across researchers, differences exist regarding the number and definition of the facets that underlie these factors (e.g., Christal, 1994; Costa & McCrae, 1992). Accordingly, despite the increased support for personality testing, not all researchers agree on the best *level* of personality measurement for use in industrial settings (Hough & Furnham, 2001). That is, should we measure the broad five factors of personality (e.g., Conscientiousness; Ones & Viswesvaran, 1996), or should we measure more narrow and specific facets of these five factors (e.g., Achievement-Striving, Organized, and Dependability as components of Conscientiousness; Paunonen & Nicol, 2001; Paunonen, Rothstein, & Jackson, 1999)? Ones and Viswesvaran (1996) argued that, due to the fact that the criterion variables of interest (i.e., job performance) are broad, the predictor variable should be broad as well. On the other hand, other researchers advocate the use of narrow predictors that can be combined into relevant composite measures as required for the criterion of interest (Goldberg, 1999; Paunonen et al., 1999; Paunonen & Nicol, 2001). Hough and Furnham (2001) concluded that both factor and facet level predictors are needed, and the choice will depend on the research question and criterion measures.

Personality and Job Performance

Overall, meta-analytic research has indicated that Conscientiousness and Emotional Stability are significant predictors of job performance across occupational

groups (Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997; Tett et al., 1991).

Furthermore, Salgado (2003) found that the criterion validity for Conscientiousness and

Neuroticism was higher in FFM than non-FFM models in estimating performance ratings.

Although the remaining factors have not been found to be generalizable predictors of

overall job performance, they have been associated with performance within specific

occupations (Barrick et al., 2001). Extraversion and Agreeableness have been found to

predict performance in positions in which interaction with others is important (e.g., sales

positions; Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 2002). Extraversion has

been linked with leadership performance (Barrick et al., 2001; Salgado, 2002), and

Openness has been positively correlated to training performance (Barrick & Mount,

1991; Salgado, 1997). Overall, personality testing tends to be a valid predictor of

performance and has been deemed to be a "relevant procedure for personnel selection"

(Salgado, 2003, p. 323).

Despite the promising results of meta-analytic research, the FFM is not without its

critics. Although some researchers believe that there are less than five higher-order

factors (e.g., Block, 1995; Block, 2001; Eysenck, 1991; Eysenck, 1992), other

researchers feel the FFM is inadequate and that other factors exist (e.g., Ashton, Lee, &

Son, 2000; Hough, 1992; Paunonen & Jackson, 2000).

Recently, Ashton et al. (2000) asserted that a sixth factor exists. This factor has

been labelled Honesty-Humility and is comprised of honesty, sincerity, modesty, fairness,

and a lack of greed (Lee & Ashton, 2004). Accordingly, Lee and Ashton (2004)

developed a six-factor measure of personality, the HEXACO, which assesses Honesty-

Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness.

In the few studies that have examined this Honesty-Humility factor, researchers have found that this construct tends to have the strongest relationship with Machiavellianism, Psychopathy, Social Adroitness (Ashton et al., 2000), anti-social behaviour (Lee, Gizzarone, & Ashton, 2003), and the likelihood to sexually harass (Lee, Ashton, & Shin, 2005). To date, there has been little research examining the HEXACO as a potential predictor of job performance.

Personality Research and the Canadian Forces Selection Process

Prior to contemplating the addition of a selection tool to an existing selection process, it is important to examine an organization's selection context, in terms of its specific procedures and predictors. The CF uses a multiple-hurdle system in which applicants need to be successful at each stage of the process in order to continue to the next. The first stage consists of the administration of a measure of cognitive ability, the CF Aptitude Test (CFAT). Subsequent steps consist of a semi-structured interview, medical examination, fitness test, and a criminal record and credit check.

The CFAT has been shown to be a valid predictor of training performance in Non-Commissioned Members (NCMs) attending Basic Recruit Training (BRT; Black, 1999; O'Keefe, 1998) as well as the Basic Officer Training Course (BOTC; O'Keefe, 1998). However, the exploration of non-cognitive measures has been advocated (Black, 1999; O'Keefe, 1998) in order to predict the motivational component of job performance and add incremental validity to the CFAT in the prediction of job performance.

The relationship between personality and job performance has been examined with military occupations using a variety of instruments (e.g., Assessment of Individual Motivation (AIM), Measure of Personal Attributes (MPA), NEO PI-R, Trait Self-

Descriptive Inventory (TSD), and Sixteen Personality Factor Questionnaire (16PF; Black,

1999; Bradley, Nicol, Charbonneau, & Meyer, 2002; O'Keefe, 1998; O'Keefe, 1999;

Salgado, 1998; Schwartz, 1999). Although Salgado (1998) found that predictive validity

for Conscientiousness and Emotional Stability generalize across military occupations in

European samples, results using Canadian Forces (CF) samples have been mixed (Jones,

Uggerslev, Paquet, Kline, & Sulsky, 2000a; 2000b; O'Keefe, 1998; O'Keefe, 1999;

Schwartz, 1999). The personality measure that has shown some promise is the TSD, a

self-report measure of the FFM, which was developed by Christal (1994) for the United

States Air Force.

Trait Self Descriptive Inventory (TSD)

In an examination of Non-Commissioned Members (NCM) and officers attending

BRT and BOTC respectively, O'Keefe (1998) found the TSD tended to be the best

predictor of performance when compared to other personality measures (i.e., NEO PI-R,

MPA, AIM, and 16PF). After controlling for gender and cognitive ability (as measured

by the CFAT), Neuroticism was associated with lower training performance for both

NCMs ($r = -.40$) and Officers ($r = -.42$), and Extraversion was associated with higher

training performance for Officers ($r = .29$; O'Keefe, 1998). However, Schwartz (1999)

was unable to replicate these results and found no significant relationships between the

TSD and BRT/BOTC performance.

In a subsequent analysis of the TSD with performance in the Military Police (MP)

occupation, O'Keefe (1999) found that MP performance correlated positively with the

Conscientiousness and Extraversion factors of the FFM, and negatively with the

Neuroticism factor. Jones et al. (2000a; 2000b) found that the TSD factors jointly

accounted for a significant amount of variance in self-reports of *Overall* and *Day-to-Day* performance; however, Conscientiousness was the only factor to account for unique variance in these performance criteria. Overall, Jones et al. (2000) concluded that the Conscientiousness, Neuroticism, and Openness factors of the TSD possessed the best psychometric properties, whereas Extraversion and Agreeableness demonstrated lower internal consistency and poorer model fit when subjected to Confirmatory Factor Analysis.

In their review of TSD research in four of The Technical Cooperation Program (TTCP)[1] countries, Syed and Klammer (2002) concluded that the TSD has consistently been a good measure of the FFM and, although the TSD's ability to predict performance has been inconsistent, many of these studies were conducted under less than ideal circumstances (e.g., small sample sizes, methodological constraints such as self-report performance criteria). Accordingly, the results of these studies were difficult to compare and additional research examining the predictive ability of the TSD was both advocated and deemed important to all TTCP nations (Syed & Klammer, 2002).

Abbreviated TSD

Recently, three abbreviated, factor-level versions of the TSD were proposed for use within the CF selection system (Boyes, 2004; O'Keefe 2004). O'Keefe (2004) extracted a 50-item version using a sample of Australian Defence Force personnel and tested the model with CF members. Using a CF sample, Boyes (2004) concluded that a 75-item TSD was the most parsimonious model that provided adequate content representation. Content was a concern because previous analyses by Jones et al. (2000b)

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[1] The TTCP is a collaborative research program between the militaries of Australia, Canada, New Zealand, Great Britain, and the United States.

indicated that some TSD facets were not significantly related to the criterion measures.

For example, of the ten Conscientiousness items contained in the 50-item abbreviated

TSD (O'Keefe, 2004), only two were contained in facets found to be predictive of *overall*

and *day-to-day* performance. As a compromise between these first two versions (i.e., the

50 and 75-item TSD), a potential 60-item measure was also proposed. Inclusion criteria

for this version relied both on the individual item factor loadings as well as the item

content (Boyes, 2004). Thus, some of the higher loading items in facets found to have

non-significant beta weights in performance criteria were omitted in favour of items from

facets found to have significant beta weights in predicting performance criteria. These

abbreviated TSD versions have yet to be examined as personnel selection tools for

predicting military training and employment.

The Criterion Challenge: Measuring Job Performance

As mentioned previously, consideration of relevant job performance criteria is

just as important as choosing appropriate predictor measures. In order to ensure that

criterion measures are relevant, it is important for them to include the behaviours that

make up job performance without being *deficient* (failing to measure job performance

behaviours) or *contaminated* (including behaviours unassociated with job performance;

Borman, 2000; Catano, Weisner, Hackett, & Methot, 2005).

One of the challenges that I/O psychologists have faced when developing valid

predictors of performance, is the operationalization of the performance domain itself

(Campbell, Gasser, & Oswald, 1996). Campbell, McCloy, Oppler, and Sager (1993)

argued that, although job performance is one of the most important dependent variables

in I/O psychology, it's measurement has tended to be "misused and exploited to the

extreme in society at large, and is frequently butchered beyond recognition in psychology" (p. 35). In part, this misuse has been due to the varied criteria that have been used as measures of job performance (Campbell et al., 1993). For example, measures of individual behaviours, performance, and specific outcomes have all been used as measures of "job performance" (Borman, 2000). These criteria are not homogeneous, however, because *behaviours* refer to what an individual actually does, *performance* refers to the addition of an evaluative component to that behaviour, and *effectiveness* refers to the degree to which those behaviours contribute to, or detract from organizational outcomes (Borman, 2000). Accordingly, Motowidlo (2001) defined job performance as "the total expected value to the organization of the discrete behavioral episodes that an individual carries out over a standard period of time" (p. 39).

The criteria for measuring job performance can be divided into two general categories: objective and subjective. Objective measures include such things as sales volume, salary, promotion rate, number of errors made, and tenure (Campbell et al., 1993), whereas subjective measures consist of ratings by others (typically a supervisor; Borman, 2000). Neither objective nor subjective job performance criteria are perfect. Objective criteria are prone to be deficient due to their tendency to be related only to specific job dimensions, and/or contaminated because they are often influenced by factors beyond the control of the individual (Borman, 2000). For example, an objective measure of a salesperson's performance may be the number of new clients/customers they acquire. However, this criterion can be deficient in that their ability to complete the administrative aspects of the sales process and contaminated by economic factors within their sales region. Subjective criteria, on the other hand, are prone to rater errors such as leniency

(rating someone higher than they should be), severity (rating someone lower than they should be), and central tendency (rating someone as average regardless of their performance; Catano et al., 2005). Notwithstanding these limitations, subjective criteria have been found to provide more accurate estimates of the validity of a selection system when compared to objective criteria (Farrell & Hakstian, 2001). Moreover, subjective criteria tend to measure job performance *behaviours* which, unlike outcomes, are within the control of the individual and, as a result, are the most relevant source of information for personnel professionals who need to assess individual differences at the hiring stage (Borman, 2000).

Ultimately, then, the job performance domain is comprised of performance dimensions, or job behaviour categories, that have been deemed relevant to the organization's goals (Catano et al., 2005). To a large extent, the general factor model with its single criterion measure of *overall* job performance has persisted in the I/O psychology literature (Campbell et al., 1993; Campbell et al., 1996). In the general factor model, job performance is essentially considered to be a one-dimensional construct in that assessments of overall job performance contain all relevant aspects of the performance domain (Viswesvaran, Schmidt, & Ones, 2005). In contrast, proponents of multidimensional models of job performance assert that distinct job performance dimensions exist, and that job performance measures must reflect this dimensionality in order to possess criterion relevance (Borman & Motowidlo, 1993; Campbell 1993; Campbell et al., 1990). Specifically, these researchers have argued that the general factor model of performance was inadequate, and used techniques such as factor and

confirmatory analyses to identify the important latent structure that underlies the performance domain (Campbell et al., 1993).

Campbell (1990b) identified eight behavioural dimensions that described "the top of the latent hierarchy in all jobs in the *Dictionary of Occupational Titles,*" (p.708) although he indicated that not all jobs would contain all eight dimensions. These dimensions are: *job-specific job proficiency* (how well one performs the core job tasks), *non-specific job proficiency* (how well one performs the tasks required for most jobs within the organization), *written and oral communication skills, demonstrating effort* (the degree of commitment to job tasks), *maintaining personal discipline* (the avoidance of negative behaviours of absenteeism, rule-breaking, and substance abuse), *facilitating team and peer performance* (the degree to which one supports peers, cooperates, and functions as a team member), *supervision* (the degree to which one influences the bahaviour of others), and *management and administration* (the ability to organize and manage tasks and resources).

Borman and Motowidlo (1993) argued that important aspects of job performance were being overlooked by measures that focused too heavily on the job task components of performance. Accordingly, they developed a model that included elements other than task performance that were nonetheless deemed important for organizational effectiveness. In addition to *task performance,* both *contextual performance* and *counterproductive behaviour* were added (Borman & Motowidlo, 1993). Contextual performance refers to sociological and psychological contributions to organizational effectiveness and includes behaviours such as helping co-workers and contributing to group morale (Borman & Motowidlo, 1993). According to Orr, Sackett, and Mercer

(1989), these contextual behaviours comprise an important component of the job performance domain. Specifically, they asserted that contextual behaviours are related to work outcomes upon which a monetary value can be calculated, and they recommended that these behaviours be considered in utility analyses (Orr, Sackett, and Mercer, 1989). Finally, counterproductive behaviour refers to intentional behaviours that detract from organizational effectiveness such as theft, absenteeism, and poor effort. A variety of measures (i.e., integrity tests) have been developed that have demonstrated the ability to predict job performance and counterproductive criteria (Wanek, 1999).

With respect to the study of the personality-counterproductive workplace behaviour (CWB) relationship, virtually all studies of personality and job performance have relied upon criterion measures such as supervisor ratings and training performance, whereas few studies have systematically examined the relationships between personality and counterproductive workplace behaviours (CWB; Salgado, 2002). Salgado (2002) classified CWBs into four categories: *absenteeism* (absence or lateness), *accidents* (accidents and related injuries), *deviant behaviours* (disciplinary problems, theft, substance abuse, rule-breaking), and *turnover* (voluntary departures). He examined the relationship between the FFM and CWBs and found that none of the FFM factors predicted absenteeism or accidents. Conscientiousness, however, predicted deviant behaviours, and all five factors predicted turnover (Salgado, 2002).

Most recently, Viswesvaran et al. (2005) conducted a meta-analysis of studies in which the intercorrelations among job performance dimensions were reported. They found that a general factor of job performance accounted for 60% of total variance in supervisor ratings after controlling for measurement error. Interestingly, they stated that

their finding of a general job performance factor was not incongruent with the emphasis

of specific job performance dimensions (Viswesvaran et al., 2005). This finding is

consistent with research conducted by Viswesvaran and Ones (2000), in which job

performance was characterized as a hierarchical structure with the general factor at the

top, and more specific dimensions of job performance below. Therefore, the level at

which a researcher should focus their attention depends on the nature of the research,

such that the use of specific job performance dimensions or the combination of

dimension scores into a composite of general job performance can each be appropriate

approaches, depending on the study (Viswesvaran & Ones, 2000; Viswesvaran et al.,

2005). Therefore, it appears that multidimensional models of job performance are not

necessarily at odds with the presence of a significant general factor.

The compatibility among job performance models is evident when examining

how they can be integrated. Catano et. al (2005) illustrated how task, contextual, and

counterproductive behaviours exist in all jobs by mapping them onto Campbell's (1990)

eight job dimensions (see Table 1).

Overview and Hypotheses

The CF selection system relies heavily on the CFAT to predict the success of

enrollees. Accordingly, there has been interest in augmenting the CFAT with a

personality instrument in order to better assess the entire job performance domain;

specifically, task performance, contextual performance, and CWBs. In addition to the

necessity to predict task and contextual performance, the need for the CF to have a

mechanism to predict CWBs (e.g., deviant behaviours) became clear during the aftermath

Table 1

Relationship Between Borman & Motowidlo (1993) and Campbell (1990b) Models of Job Performance

Borman & Motowidlo (1993)	Campbell (1990b)
Job Task Behaviours	Job-specific behaviours Non-job-specific behaviours Leadership/supervision Management/administration
Contextual Behaviours	Written and oral communication Demonstrating effort Facilitating peer and team performance
Counterproductive Behaviours	Maintaining personal discipline

Modified from Catano et al. (2005)

of the Canadian Airborne Regiment (CAR) deployment to Somalia. The Somalia Inquiry, which was convened to investigate the misconduct of the CAR while deployed on a United Nations Peacekeeping mission in 1992, identified a variety of failings of the existing personnel selection system in this regard. Specifically, the final report of the Inquiry highlighted the fact that, despite the requirement for soldiers to be professional and mature in order to carry out their duties effectively within a theatre of operations, the selection system failed to ensure that soldiers with the requisite qualities were assigned to the CAR. Rather, the Inquiry revealed that some soldiers with disciplinary problems and documented instances of misconduct were assigned to the CAR for deployment to Somalia (Official Report of the Somalia Inquiry).

Despite the volume of research conducted over the past 15 years linking personality with job performance, important questions remain. Specifically, what is the best taxonomy of personality for predicting behaviour in the workplace, and what criteria should be used as the most relevant measure of job performance to examine this

relationship? At this time, a suitable measure has not been found that adds incremental validity to the CFAT on a consistent basis. It is uncertain as to whether the reason for this failure lies with the personality measures themselves, the criteria upon which they have been evaluated, or the theoretical link between personality and performance. In order to better examine the personality-performance relationship, greater attention must be paid to both sides of the equation. Accordingly, the goals of this research are to examine the psychometric properties of three personality inventories, construct a relevant measure of the job performance domain to assess the personality-performance relationship, and assess the incremental predictive ability of self-report personality testing as an individual difference selection tool over and above cognitive ability.

The present study will both address earlier inconsistencies in the personality-performance relationship, and provide new insight into the ability of 5- and 6-factor personality inventories to predict overall performance as well as specific job-relevant behaviour dimensions (e.g., deviant behaviours). Accordingly, this study also will provide valuable information to the CF with respect to the use of personality inventories in the CF Recruiting and Selection system, and introduce a multi-dimensional measure of job performance relevant to initial military training courses.

Therefore, based on previous research that the TSD is a good measure of the FFM (Syed & Klammer, 2002), and based on the fact that the items for the abbreviated TSD versions were selected based on having the strongest factor loadings (Boyes, 2004; O'Keefe, 2004), the following hypotheses were made:

Hypothesis 1a: The factor structure of the three TSD versions will conform to the five factor model.

Hypothesis 1b: Each factor of the TSD versions will demonstrate convergent validity with its respective factor on the NEO FFI and the HEXACO.

Based on the meta-analytic findings by Salgado (2002) that Conscientiousness predicts deviant counterproductive workplace behaviours, and the relationship between Honesty-Humility (HEXACO) and anti-social behaviour (Lee, Gizzarone, & Ashton, 2003), the following hypothesis was made:

Hypothesis 2: The Conscientiousness factor of each of the personality measures (i.e., 75-, 60-, and 50-item TSD; NEO-FFI, and HEXACO), and the Honesty-Humility factor of the HEXACO, will predict counterproductive workplace behaviour measures, even after controlling for demographic variables and cognitive ability.

Based on the meta-analytic findings that Neuroticism and Conscientiousness are predictive of job performance across jobs (Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997; Tett et al., 1991), that Openness is predictive of training performance (Barrick & Mount, 1991; Salgado, 1997), and that Extraversion is associated with leadership performance (Barrick et al., 2001; O'Keefe, 1998; Salgado, 2002), the following hypotheses was made:

Hypothesis 3a: The Neuroticism, Conscientiousness, and Openness factors of the personality measures (i.e., 50-, 60-, and 75-item TSD; NEO-FFI, and HEXACO) will account for incremental variance in ratings of overall performance, general job task proficiency, and contextual performance over and above the variance accounted for by demographic variables and the CFAT.

Hypothesis3b: The Extraversion factor of the personality measures (i.e., 50-, 60, and 75-item TSD; NEO-FFI, and HEXACO) will account for incremental variance in supervisor assessments of leadership, over and above the variance accounted for by demographic variables and the CFAT.

Finally, given the argument that the 75-item TSD was the most parsimonious model that provided adequate content representation of the original TSD (Boyes, 2004), the following hypothesis was made:

Hypothesis 4: The 75-item TSD will demonstrate the strongest predictive validity of overall performance, general job task proficiency, contextual performance, and counterproductive workplace behaviours of the three TSD versions.

Method

Participants

Six hundred and forty-eight Canadian Forces members undergoing initial military training voluntarily participated in the study. The sample consisted of 515 Non-Commissioned Members (NCM) from the Basic Military Qualification (BMQ) Course, and 124 Officer Cadets from the Initial Assessment Phase (IAP) with a mean age of 24.44 (SD = 6.47). Nine participants did not indicate which course they were attending. Of the 648 participants, 539 were male, 91 were female, 442 were Anglophone, and 188 were Francophone (18 participants reported neither their sex nor language).

Predictor Measures

Cognitive Ability. The Canadian Forces Aptitude Test (CFAT) is a measure of cognitive ability that is administered to all Canadian Forces applicants during the

recruiting and selection process. It contains 60 items which are divided into three sub-

tests as follows: Verbal Skills (VS; 15 items), Spatial Ability (SA; 15 items), and

Problem Solving (PS; 30 items). The CFAT is a speeded test with each subtest allocated a

specific amount of time: 5 minutes for VS, 15 minutes for SA, and 30 minutes for PS.

Using separate norms for the English and French applicant populations, cut-off scores

have been established at both the sub-test and total score (all 60 items) levels to

determine eligibility for the CF in general, as well as for specific military occupations

(MOCs) and entry programs. The CFAT can be administered via computer or paper-and-

pencil.

Personality. Three personality inventories were used in the study: two five-factor

measures and one six-factor measure, the TSD (Experimental), NEO-FFI, and HEXACO,

respectively.

The TSD is a FFM measure of personality developed for use by the United States

Air Force (Christal, 1994)[2]. The TSD is a self-report questionnaire consisting of 64

adjectives and 99 statements. For the adjectives, respondents are asked to indicate on a

nine-point Likert scale, the degree to which each adjective describes them (1 = extremely

uncharacteristic; 9 = extremely characteristic). The statements are rated differently as

respondents are asked to indicate on a seven-point Likert-type scale the degree to which

they agree with each statement (1 = very strongly disagree; 7 = very strongly agree).

Initially a computerized instrument, a paper-and-pencil version of the TSD was

developed for use in the United Kingdom (UK) by Collis (1997)[3].

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[2] The US Air Force version of the TSD was referred to as the Air Force Self Description Inventory (AFSDI).
[3] The United Kingdom version of the TSD was referred to as the OCEAN (acronym for the five factors).

The TSD-Experimental (TSD-E), used for this study, contains a selection of TSD items recommended by Boyes (2004) and O'Keefe (2004) for inclusion in abbreviated 75-, 60-, and 50-item, factor level versions of the TSD. Due to the fact that the abbreviated versions of the TSD each contained some unique items, (Boyes, 2004; O'Keefe, 2004), an 85-item TSD-E was administered in order to examine the 75-, 60-, and 50-item TSD versions. The TSD-E is a self-report, paper-and-pencil FFM measure comprised of 31 adjectives and 54 statements. Unlike the original TSD, which used different response scales (i.e., nine-point "characteristic/uncharacteristic", and seven-point "agree/disagree" scales), the abbreviated TSD used the same response scale for both adjectives and statements such that respondents were asked to indicate, on a seven-point Likert-type scale, the degree to which each adjective/statement described them (1 = extremely uncharacteristic, 2 = moderately uncharacteristic, 3 = slightly uncharacteristic, 4 = neither characteristic nor uncharacteristic, 5 = slightly characteristic, 6 = moderately characteristic, 7 = extremely characteristic). Examples of TSD adjective and statement items are: *Self-pitying; I tend to get upset easily* (Neuroticism); *Verbal; I like parties where there are a lot of people* (Extraversion); *Philosophical; I have a lot of intellectual curiosity* (Openness); *Helpful; I like to help others when they are down on their luck* (Agreeableness); and *Organized; I always try to do more than is expected of me* (Conscientiousness); respectively. In the current study, Cronbach's alphas for the 75-, 60-, and 50-item TSD versions were high for NCMs and Officers: Neuroticism (α's ranged from .89 to .93), Extraversion (α's ranged from .87 to .91), Openness (α's ranged from .86 to .91), Agreeableness (α's ranged from .87 to .91), and Conscientiousness (α's ranged from .87 to .91).

The NEO FFI consists of 60 items (statements) to which respondents are asked to indicate on a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree) the degree to which each statement represented their opinion. The NEO FFI is a factor level measure of the FFM. The paper-and-pencil self-report version of the NEO FFI was used for this study (Costa & McCrae, 1992) and takes approximately 10-15 minutes to complete. Examples of NEO-FFI items are: *I often feel inferior to others* (Neuroticism); *I like to have a lot of people around me* (Extraversion); *I am intrigued by the patterns I find in art and nature* (Openness); *Most people I know like me* (Agreeableness); and *I work hard to accomplish my goals* (Conscientiousness); respectively. In addition to the factor items, the NEO-FFI contains three validity items which ask the respondent to answer "yes" or "no" to the following questions: *Have you responded to all of the statements?*, *Have you entered your responses in the correct boxes?*, and *Have you responded accurately and honestly?* Scoring is not recommended of the respondent answers "no" to either of the latter two validity items (Costa & McCrae, 1992). Cronbach's alphas for this study were good for NCMs and Officers: Neuroticism (α's = .85 and .88, respectively); Extraversion (α's = .78 and .84, respectively); Openness (α's = .72 and .73, respectively); Agreeableness (α's = .72 and .79, respectively); and Conscientiousness (α's = .87 and .85, respectively).

The HEXACO (Lee & Ashton, 2004) is a 96-item, paper-and-pencil, six-factor measure of personality. Respondents are asked to indicate, on a five-point Likert-type scale, the degree to which they agree with each statement (1 = strongly disagree; 5 = strongly agree). The HEXACO factors of Extraversion, Openness, Agreeableness, and Conscientiousness are similar to their FFM counterparts, as is the HEXACO

Emotionality factor with the Neuroticism/Emotional Stability factor of the FFM. The

factor of Honesty-Humility is proposed as the sixth factor of personality (Lee & Ashton,

2004). Examples of HEXACO items are: *If I knew that I could never get caught, I would*

be willing to steal a million dollars (Honesty-Humility); *I sometimes can't help worrying*

about little things (Emotionality); *My style of speaking is often quite dramatic*

(Extraversion); *I rarely hold a grudge, even against people who have badly wronged me.*

(Agreeableness); *When working, I often set ambitious goals for myself*

(Conscientiousness); *I'm interested in learning about the history and politics of other*

countries (Openness). In the present study, Cronbach's alphas were good for NCMs and

Officers: Honesty-Humility (α's = .76, .83; respectively); Emotionality (α's = .81 and

.76, respectively); Extraversion (α's = .82 and .84, respectively); Agreeableness (α's =

.81 and .83, respectively); Conscientiousness (α's = .84 and .84, respectively), and

Openness (α's = .83 and .83, respectively).

Job Performance Criteria

Three sources of job performance criteria were used in this study. The first source

was the formal course report that is completed on every successful candidate on the

Initial Assessment Phase (IAP) and Basic Military Qualification (BMQ) courses[4]. The

second source was a Supervisor Rating Form developed specifically to assess job relevant

behaviours for initial military training. The third source was a self-report measure of

CWB.

Course Reports. Upon completion of the BMQ and IAP courses, candidates

receive a formal evaluation of their performance. Specifically, this evaluation, or course

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[4] The IAP is the initial component of officer training and was previously referred to as the Basic Officer Training Course (BOTC). The BMQ is the initial component of Non-Commissioned Member (NCM) training and was previously referred to as Basic Recruit Training (BRT).

report, contains the results of all assessed performance components of the BMQ and IAP. Although both the BMQ and IAP are entry-level CF training, each course report is oriented to a specific population. The BMQ trains Non-Commissioned recruits (i.e., individuals who will be employed as operators and technicians), whereas the IAP trains individuals aspiring to become Officers (i.e., managers and leaders). Therefore, although both the BMQ and IAP provide the foundations for military indoctrination (e.g., drill, physical training, military traditions and customs, teamwork, etc.), IAP candidates also receive extensive leadership training and assessment. Specifically, the BMQ course report contains the candidate's academic average (weighted at 50% in the total score), a grade for inspections of uniform and living space (weighted at 10% in the total score), a grade for weapons handling and safety (weighted at 15% in the total score), the results of a physical fitness test (weighted at 15% in the total score), and an assessment by the training staff (weighted at 10% in the total score). The IAP course report also contains the candidate's academic average (weighted at 15% in the total score), a grade for weapons handling and shooting (weighted at 20% in the total score), the results of a physical fitness test (weighted at 15% in the total score), and an assessment by the training staff (weighted at 10% in the total score). Unlike the BMQ course report, however, the IAP course report contains evaluations for drill (weighted at 10% in the total score), and leadership (weighted at 30% in the total score). Formal course reports were received on each of the successful participants from the Canadian Forces Leadership and Recruit School, and the total score (out of a possible 100) was used as the job performance criterion measure labelled *Course Report Grade*. Additionally, the leadership score of IAP candidates was used as a criterion measure of leadership performance.

Supervisor Rating Forms. In order to acquire job performance information for

overall job performance, task performance, contextual performance, and

counterproductive behaviour, a Supervisor Rating Form (SRF) was developed based on

Campbell et al.'s (1990) model of job performance behaviours. Campbell's model was

selected as the most theoretically relevant due to its emergence from the US Army's

extensive research with Project A, where both predictors and criterion measures were

developed for initial military training courses (Campbell, 1990a). This model was

augmented with CF research (Ellis & Spinner, 1997; Park & Weisner, 1999; Stouffer,

1994) into the dimensions deemed necessary for successful completion of BMQ and IAP.

Additionally, job performance dimensions included in the next generation of Project A,

Select21 (Knapp, Sager, & Tremble, 2005; Sager, Russell, Campbell, & Ford, 2005). In

total, the SRF for the BMQ consisted of 12 dimensions (see Table 2), and the IAP version

contained 15 (see Table 3), due to the emphasis on assessment of leadership in the

training and assessment of officer candidates. Each dimension was assessed using

Behaviourally Anchored Rating Scales (BARS). Specifically, behavioural anchors were

developed based on a five-point scale (1 = poor performance, 2 = below average

performance, 3 = average performance, 4 = above average performance, 5 = superior

performance). Behavioural examples were provided for anchors 1, 3, and 5. Detailed

instructions accompanied each SRF that explained the manner in which the forms were to

be completed.

In total, four job performance criterion measures were extracted from the SRFs:

Overall Job Performance, General Job Task Proficiency, Contextual Behaviour, and

Personal Discipline (as a measure of counterproductive workplace behaviours). The

Table 2

Job Performance Dimensions for the BMQ (Non-Commissioned Members)

Job Performance Dimension	Description
1. General Task Proficiency	Degree to which the candidate is able to perform the military tasks required during this phase of training, including maintenance of military kit and equipment.
2. Effort	Degree to which the candidate strives to ensure that the full range of job tasks are completed properly.
3. Following Instructions, Regulations and Orders	Degree to which the candidate understands and adheres to formal and informal rules and regulations, and accepts direction from those in authority positions.
4. Cooperation	Degree to which the candidate gets along with their peers and works as a member of a team.
5. Leadership Potential	Degree to which candidate seeks positions of authority and their ability to motivate others to perform assigned tasks.
6. Integrity	Degree to which the candidate adheres the values of honesty and trustworthiness, and behaves ethically.
7. Self-Development	Degree to which the candidate strives to improve their professional skills and abilities and accepts/learns from criticism of performance.
8. Self-Control	Degree to which the candidate maintains emotional control.
9. Performance Under Stress	Degree to which the candidate maintains proficiency when exposed to high levels of mental and physical stress.
10. Flexibility/Adaptability	Degree to which the candidate adapts to changing or novel situations.
11. Oral Communication Skills	Degree to which the candidate expresses themselves in a clear and concise manner.
12. Military Appearance and Bearing	Degree to which candidate maintains military appearance and exudes professionalism.

Modified from Campbell, 1990; Knapp et al., 2005; Sager, et al., 2005; Stouffer, 1994

Table 3

Job Performance Dimensions for the IAP (Officer Candidates)

Job Performance Dimension	Description
1. General Task Proficiency	Degree to which the candidate is able to perform the military tasks required during this phase of training. including maintenance of military kit and equipment.
2. Effort	Degree to which the candidate strives to ensure that the full range of job tasks are completed properly.
3. Following Instructions, Regulations and Orders	Degree to which the candidate understands and adheres to formal and informal rules and regulations. and accepts direction from those in authority positions.
4. Leadership	Degree to which candidate seeks positions of authority and their ability to motivate others to perform assigned tasks.
5. Cooperation	Degree to which the candidate gets along with their peers and works as a member of a team.
6. Command – Planning	Degree to which one manages time organizes activities.
7. Command – Delegating	Degree to which candidate delegates tasks in consideration of task difficulty and subordinate capability.
8. Command – Supervising	Degree to which the candidate manages their subordinates and tasks: situational awareness of progress and priorities.
9. Integrity	Degree to which the candidate adheres the values of honesty and trustworthiness. and behaves ethically.
10. Self-Development	Degree to which the candidate strives to improve their professional skills and abilities and accepts/learns from criticism of performance.
11. Self-Control	Degree to which the candidate maintains emotional control.
12. Performance Under Stress	Degree to which the candidate maintains proficiency when exposed to high levels of mental and physical stress.
13. Flexibility/Adaptability	Degree to which the candidate adapts to changing or novel situations.
14. Oral Communication Skills	Degree to which the candidate expresses themselves in a clear and concise manner.
15. Military Appearance and Bearing	Degree to which candidate maintains military appearance and exudes professionalism.

Modified from Campbell. 1990: Knapp et al.. 2005: Sager. et al.. 2005: Stouffer. 1994

Overall Performance composite measure was calculated by computing the mean score of

the SRF dimensions for BMQ (12 dimensions; $\alpha = .94$) and IAP (15 dimensions; $\alpha = .94$)

candidates. *General Job Task Proficiency* consisted of *General Job Task Proficiency* item

from the BMQ SRF, and the computed mean score of *General Job Task Proficiency,*

Leadership, and Command variables (i.e., planning, delegating, and supervising) from the

IAP SRF due to the fact that the leadership components are a critical component of the

IAP course. *Contextual Performance* was computed as the mean score of *Effort,*

Cooperation, Flexibility/Adaptability, and *Oral Communication Skills* for IAP

candidates. For BMQ candidates, the *Leadership Potential* dimension was included with

Effort, Cooperation, Flexibility/Adaptability, Oral Communication Skills, due to the fact

that leadership is considered extra-role behaviour for NCMs at initial levels of training.

The *Personal Discipline* variable was computed as mean score of SRF items *Following*

Instructions, Regulations, and Orders; Integrity, Self-Development, Self-Control,

Performance Under Stress, and *Military Appearance and Bearing.* In the present study,

Cronbach's alphas were good; $\alpha = .94$ for *Overall Performance* (IAP and BMQ); $\alpha = .93$

for *General Job Task Proficiency* (IAP)[5]; $\alpha = .81$ and $\alpha = .83$ for *Contextual Performance*

for the IAP and BMQ SRF, respectively; and $\alpha = .87$ and $\alpha = .90$ for the *Personal*

Discipline for the IAP and BMQ SRF, respectively.

   Workplace Deviance. In addition to the CWB variable (i.e., *Personal Discipline*)

that was extracted from the SRFs, counterproductive workplace behaviour was measured

with a modified version of the self-report Measure of Workplace Deviance (MWD;

Bennett & Robinson, 2002). The MWD used in this study consisted of 20 statements

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[5] Cronbach's alpha was not provided for the *General Job Task Proficiency* variable of the BMQ SRF because this criterion consisted of one item.

adapted from Bennett and Robinson (2000) and Kelloway, Loughlin, Barling, and Nault

(2002) for use with a military sample. The MWD contains two subscales: *organizational*

deviance, or counterproductive acts that impact the organization negatively (e.g., *Left*

work early without permission); and *interpersonal deviance*, or counterproductive acts

that negatively impact others within the workplace (e.g., *Publicly embarrassed someone*

at work). Respondents indicated, on a five-point Likert-type scale, the frequency with

which they performed the behaviour (1 = never; 5 = daily). In this study, Cronbach's

alphas for both organizational deviance (α = .83 for both NCMs and Officers) and

interpersonal deviance (α = .83 for both NCMs and Officers) were good.

Procedure

A questionnaire was administered to BMQ and IAP candidates in a classroom

setting within the first three weeks of course commencement. At the beginning of each

session, the candidates were given a brief overview of the research and asked to read and

sign an informed consent form (Appendix A). The candidates were instructed that their

participation was voluntary, their results would be used for research purposes only, and

their instructors would be unaware of their responses or whether they participated. The

questionnaire was available in both English and French and the participants completed

the questionnaire in their first official language. Upon completion of the course,

supervisors completed both the formal course evaluations as well as the appropriate SRF.

Finally, CFAT results were retrieved from the CF database and matched with the

questionnaire results from the participants using the participant's Service Number. Once

the data were matched, the identifying information was deleted from the database used

for the analyses.

Results

Data Analyses

The data were analyzed for accuracy, normality, linearity, homoscedasticity, and univariate and multivariate outliers. With respect to accuracy, the NEO-FFI contains three validity items (e.g., respondents are asked to indicate whether they responded accurately, and honestly). Eight of the participants answered that they did not respond accurately and honestly and, therefore, they were excluded from all analyses. Normality was assessed through an examination of histograms due to the potential for skewness and kurtosis statistics to be significant with large sample sizes (Tabachnick & Fidell, 2001). An examination of histograms suggested that the self-report CWB variables (i.e., organizational deviance and interpersonal deviance) were positively skewed. The positive skew contributed to the presence of some heteroscedasticity of residuals in regression analyses. Although heteroscedasticity does weaken regression analyses, it does not invalidate the results (Tabachnick & Fidell, 2001). Finally, computed variables were checked for univariate outliers. In total, ten cases were removed for having values on computed variables in excess of 4 standard deviations from the mean. Furthermore, regression analyses were conducted to determine the presence of multivariate outliers. The criterion for case removal was based on the influence of the multivariate outlier. Cook's distance values greater than one are deemed to have undue influence on the results and, accordingly, four additional cases were removed. In total, 22 cases were removed.

Additionally, job performance criterion data were unavailable for 85 candidates

who did not complete the training and, due to delays in the translation of the Supervisor

Rating Forms into French, SRFs were unavailable for French BMQ candidates

$(N = 171)$.[6] The sample sizes for the regression analyses were impacted accordingly.

Confirmatory Factor Analyses – Personality Inventories

Confirmatory Factor Analyses were conducted on the 75-, 60-, and 50-item TSD

versions, as well as the NEO-FFI and HEXACO using EQS 6.1 (Bentler & Wu, 2004).

The covariance matrix was used for the analyses using the maximum-likelihood (ML)

method. In all cases, the factor variance was set to 1.00 to set the scale for the model.

According to Hu and Bentler (1998; 1999), a two-index presentation strategy for

goodness-of-fit indices is recommended. Specifically, they recommended the use of the

standardized root mean square residual (SRMR) in addition to a comparative fit index

(e.g.; the Comparative Fit Index (CFI), root mean square error of approximation

(RMSEA); Hu & Bentler, 1998; 1999). The SRMR is a residuals-based fit index and

assesses fit based on the average differences between the sample variances and

covariances and the estimated population variances and covariances (Tabachnick &

Fidell, 2001). The CFI and RMSEA are comparative fit indices, which compare the

proposed model with a restricted baseline model (Hu & Bentler, 1998). The CFI

compares the proposed model with an independent model using a non-central χ^2

distribution, whereas the RMSEA estimates the fit as compared to a perfect model

(Tabachnick & Fidell, 2001). In terms of cut-off criteria, Hu and Bentler (1998; 1999)

suggested that values *close* to .95 for ML-based CFI, .08 for SRMR, and .06 for RMSEA

are indicative of good model fit. In EQS 6.1, the selection of "robust" statistics calculates

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[6] Supervisors for the French IAP candidates completed the English version of the SRF.

the Satorra and Bentler Scaled Statistic (S-Bχ^2), which has been reported to be the most

reliable when evaluating covariance matrices under various conditions (i.e., sample sizes

and distributions; Byrne, 1994). Accordingly, robust statistics were used for all fit indices

except the SRMR (the robust statistic is not available for the SRMR). The results of the

CFAs are presented in Table 4 for the five- and six-factor models[7]. Examination of the

standardized factor loadings for the 50-, 60-, 75-item TSD versions and NEO-FFI

indicates that some of the items performed poorly with this sample and should be re-

evaluated (see Appendices B, C, D, and F, respectively). In particular, the NEO-FFI has

several poorly fitting items within the Openness and Agreeableness factors. Standardized

loadings for the HEXACO could not be examined at the item level as facet scores were

used for the Confirmatory Factor Analysis versus specific items (see Appendix E).

Table 4

Goodness-of-Fit Indices for the TSD, NEO-FFI, and HEXACO

Model	χ^2	df	SRMR[a]	RMSEA	CFI
1. TSD (75-item)	7783	2690	.09	.05	.78
2. TSD (60-item)	5240	1697	.08	.05	.81
3. TSD (50-item)	3749	1114	.08	.06	.83
4. NEO-FFI	4415	1700	.08	.05	.75
5. HEXACO	1446	237	.09	.08	.72

Note. [a] Robust statistics were not calculated for the SRMR. SRMR - Standardized Root Mean Square residual. RMSEA - Root Mean Square Error of Approximation. CFI - Comparative Fit Index.

Examination of the goodness-of-fit indices provides conflicting evidence of

model fit to the data. For the 75-, 60-, and 50-item TSD versions, the SRMR (.09, .08,

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[7] Due to the fact that a CFA on the 96-item HEXACO could not be conducted with EQS, the six-factor model was run with HEXACO facets (four per factor) rather than individual items.

and .08, respectively) and RMSEA (.05, .05, and .06, respectively) suggest marginal to good fit for the FFM, but the CFI (.78, .81, and .83, respectively) indicates a poor model fit to the data. Similar results were found for the NEO-FFI (SRMR = .08, RMSEA = .05, and CFI = .75), whereas all fit indices for the HEXACO were indicative of marginal to poor fit (SRMR = .09, RMSEA = .08, and CFI = .72). Confirmatory Factor Analyses were also conducted with the data separated by language (see Appendix G)[8].

For all subsequent analyses, Officer candidates (attending the IAP) and NCM candidates (attending the BMQ) were examined separately because the grading dimensions were different for both the formal course reports and the Supervisor Rating Forms. Moreover, the courses represent different career paths and should be examined individually.

Convergent Validity

Correlations among the similar factors of the 75-, 60-, and 50-item TSD versions, the NEO-FFI, and HEXACO are presented in Tables 5 (IAP candidates) and 6 (BMQ candidates). The construct validity of the three TSD versions was examined, in terms of the correlations of each of the five factors with their respective factor on the NEO-FFI and HEXACO. Each factor of the three TSD versions was expected to be highly correlated with its associated factor on the NEO-FFI and HEXACO. The factors of the 75-, 60-, and 50-item TSD versions were highly correlated with their related NEO-FFI factor for IAP candidates (Neuroticism, $r = .85$, $r = .85$, $r = .81$, respectively; Extraversion, $r = .65$, $r = .65$, $r = .60$, respectively; Openness, $r = .74$, $r = .73$, $r = .67$,

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[8] Given that the pattern of standardized loadings was similar for the English and French candidates, the decision was made to combine the two samples.

Table 5

Intercorrelations Among Personality and Job Performance Variables for Initial Assessment Phase (IAP) Candidates

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1. TSD75_N	(.90)																																
2. TSD75_E	-.37	(.91)																															
3. TSD75_O	-.16	.04	(88)																														
4. TSD75_A	-.32	.20	.25	(.91)																													
5. TSD75_C	-.30	.02	.16	.38	(.90)																												
6. TSD60_N	.99	-.37	-.17	-.32	-.33	(.93)																											
7. TSD60_E	-.37	.99	.04	.23	.05	-.36	(.88)																										
8. TSD60_O	-.17	.06	.99	.26	.18	-.18	.05	(.88)																									
9. TSD60_A	-.32	.21	.25	.99	.39	-.32	.24	.26	(.89)																								
10. TSD60_C	-.34	.04	.20	.45	.97	-.36	.07	.21	.45	(.87)																							
11. TSD50_N	.95	-.33	-.11	-.22	-.22	.94	-.31	-.12	-.22	-.25	(.89)																						
12. TSD50_E	-.35	.96	.01	.15	.01	-.35	.95	.03	.18	.02	-.31	(.90)																					
13. TSD50_O	-.17	.05	.97	.23	.17	-.18	.04	.99	.23	.22	-.13	.02	(.86)																				
14. TSD50_A	-.27	.14	.27	.90	.37	-.27	.16	.28	.92	.42	-.15	.13	.27	(.89)																			
15. TSD50_C	-.29	.02	.09	.27	.96	-.31	.05	.11	.28	.89	-.21	.02	.10	.24	(.91)																		
16. NEO_N	.85	-.37	-.20	-.31	-.23	.85	-.37	-.21	-.32	-.27	.81	-.35	-.20	-.27	-.21	(.88)																	
17. NEO_E	-.52	.65	.17	.47	.28	-.52	.65	.20	.47	.33	-.44	.60	.19	.34	.23	-.56	(.84)																
18. NEO_O	-.19	.11	.74	.28	.01	-.18	.12	.73	.28	.02	-.11	.09	.67	.25	-.03	-.22	.25	(.73)															
19. NEO_A	-.39	.14	.00	.55	.31	-.39	.15	.02	.54	.30	-.35	.15	-.02	.49	.32	-.33	.37	.12	(.79)														
20. NEO_C	-.43	.20	.11	.40	.77	-.46	.22	.12	.42	.78	-.36	.20	.12	.38	.74	-.40	.49	.00	.41	(.85)													
21. HEX_N	.64	-.18	-.23	-.11	-.05	.64	-.16	-.21	-.10	-.09	.66	-.14	-.21	-.01	-.06	.59	-.28	-.13	-.04	-.09	(.76)												
22. HEX_E	-.41	.81	.19	.40	.16	-.42	.81	.20	.39	.20	-.33	.77	.19	.29	.12	-.47	.78	.25	.27	.37	-.17	(.84)											
23. HEX_O	-.21	.14	.72	.35	.12	-.21	.14	.71	.34	.13	-.14	.11	.65	.28	.10	-.24	.27	.81	.20	.09	-.17	.29	(.83)										
24. HEX_A	-.36	.00	-.11	.41	.21	-.34	.00	-.07	.41	.19	-.33	.02	-.08	.42	.23	-.20	.20	-.04	.69	.26	-.04	.06	-.01	(.83)									
25. HEX_C	-.28	.13	.19	.27	.78	-.30	.14	.21	.28	.75	-.21	.15	.20	.30	.74	-.27	.37	.09	.37	.77	.04	.27	.14	.24	(.84)								
26. HEX_H	-.33	.04	.18	.23	.28	-.30	.06	.19	.26	.30	-.24	.09	.17	.34	.25	-.33	.13	.20	.43	.35	-.09	.10	.18	.25	.39	(.83)							
27. IAP Grd	-.07	.05	.08	-.04	.03	-.09	.05	.07	-.06	.05	-.06	.04	.09	-.07	.00	-.13	.14	.07	-.09	.05	-.07	.03	-.01	-.08	.05	.19	-						
28. SRF Grd	-.02	.13	.03	.08	.16	-.04	.13	.03	.07	.18	.02	.14	.04	.09	.15	-.12	.20	.08	-.15	.20	.05	.17	.05	-.21	.15	.15	.60	(.94)					
29. Job Task	-.02	.24	.02	.00	.14	-.05	.24	-.02	.00	.16	.02	.23	-.03	.01	.12	-.12	.24	.05	-.22	.21	.02	.23	.01	-.28	.19	.15	.60	.93	(.93)				
30. Context	.00	.03	-.00	.11	.15	-.00	.03	.00	.11	.16	.07	.02	.02	.11	.15	-.06	.09	.05	-.13	.13	.08	.06	.02	-.14	.05	.10	.53	.89	.79	(.81)			
31. Pers Dspln	-.04	.08	.05	.12	.16	-.06	.07	.05	.10	.18	-.01	.09	.05	.12	.15	-.11	.19	.10	-.08	.19	.04	.16	.10	-.15	.15	.16	.52	.93	.77	.74	(.87)		
32. Org Dev	.23	-.01	-.11	-.36	-.41	.24	-.03	-.11	-.36	-.43	.16	-.03	-.08	-.37	-.36	.21	-.18	-.08	-.40	-.39	.01	-.13	-.13	-.32	-.40	-.49	-.14	-.09	-.10	-.08	-.06	(.83)	
33. Int Dev	.34	.08	-.11	-.33	-.17	.33	.06	-.12	-.32	-.15	.30	.07	-.08	-.31	-.16	.28	-.14	-.18	-.50	-.25	.06	-.03	-.16	-.50	-.19	-.31	.03	.19	.18	.12	.14	.68	(.83)
M	2.75	4.57	4.63	5.45	5.27	2.61	4.64	4.67	5.49	5.41	2.50	4.58	4.79	5.38	5.16	2.17	3.74	3.44	3.76	3.96	2.73	3.43	3.63	3.18	3.75	3.62	76.14	3.45	3.22	3.45	3.62	1.75	1.56
SD	.93	.94	.93	.67	.72	.98	.95	1.00	.69	.69	.92	1.04	1.01	.74	.88	.58	.52	.49	.49	.46	.45	.50	.60	.51	.43	.54	7.15	.67	.80	.70	.72	.42	.44

Notes. Listwise $N=106$; $r \geq .19$, $p < .05$; $r \geq .25$, $p < .01$; $r \geq .33$, $p < .001$; TSD = Trait Self-Descriptive Inventory, NEO = NEO-FFI, HEX = HEXACO PI, Neuroticism; E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, HEX_N = Emotionality, H = Honesty-Humility; BMQ Grd = Basic Military Qualification Course final grade; SRF Grade = mean composite score of the 12 BMQ Supervisor Rating Form dimensions; Job Task = SRF item assessing general job task proficiency; Context = Contextual Performance; Pers Dspln = mean composite score of SRF dimensions that comprise personal discipline (counterproductive workplace behaviours); Org Dev = Organizational Deviance; Int Dev = Interpersonal Deviance. Cronbach's alphas are in parentheses along the diagonal. Correlations in bold indicate correlations between respective FFM factors.

Table 6

Intercorrelations Among Personality and Job Performance Variables for Basic Military Qualification (BMQ) Candidates

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1. TSD75_N	(.91)																																
2. TSD75_E	-.35	(.89)																															
3. TSD75_O	.08	.01	(.91)																														
4. TSD75_A	-.02	.29	.21	(.89)																													
5. TSD75_C	-.15	.08	.09	.33	(.91)																												
6. TSD60_N	.99	-.39	.05	-.02	-.16	(.91)																											
7. TSD60_E	-.36	.99	.01	.30	.11	-.40	(.88)																										
8. TSD60_O	.07	.02	.99	.20	.08	.04	.02	(.90)																									
9. TSD60_A	-.02	.31	.21	.99	.31	-.02	.32	.21	(.87)																								
10. TSD60_C	-.19	.11	.12	.37	.97	-.19	.13	.11	.35	(.88)																							
11. TSD50_N	.94	-.33	.02	.03	-.09	.95	-.34	.02	.03	-.13	(.90)																						
12. TSD50_E	-.44	.93	-.03	.23	.03	-.48	.94	-.01	.24	.05	-.42	(.87)																					
13. TSD50_O	.04	.04	.98	.18	.07	.01	.03	.99	.19	.10	-.01	.00	(.90)																				
14. TSD50_A	.04	.19	.21	.91	.29	.04	.20	.21	.93	.35	.09	.12	.19	(.87)																			
15. TSD50_C	-.16	.07	.03	.23	.96	-.16	.09	.02	.20	.90	-.10	.03	.00	.18	(.87)																		
16. NEO_N	.82	-.30	-.07	-.11	-.25	.82	-.32	-.07	-.11	-.28	.79	-.36	-.09	-.05	-.24	(.85)																	
17. NEO_E	-.31	.63	.04	.46	.28	-.31	.62	.06	.45	.30	-.26	.56	.07	.35	.23	-.30	(.78)																
18. NEO_O	-.02	.15	.75	.23	.03	-.03	.14	.76	.23	.06	-.02	.13	.73	.24	.01	-.07	.13	(.72)															
19. NEO_A	-.17	.20	-.07	.64	.27	-.16	.23	-.06	.61	.27	-.09	.20	-.07	.56	.23	-.23	.38	.02	(.72)														
20. NEO_C	-.32	.07	.07	.23	.78	-.31	.10	.06	.21	.77	-.25	.08	.05	.21	.76	-.38	.29	.03	.30	(.87)													
21. HEX_N	.64	-.01	-.03	.31	.11	.64	.00	-.03	.29	.07	.66	-.09	-.06	.31	.10	.56	.04	-.01	.19	-.03	(.81)												
22. HEX_E	-.28	.79	.16	.39	.23	-.30	.78	.18	.38	.25	-.24	.72	.19	.26	.20	-.29	.75	.24	.24	.19	.07	(.82)											
23. HEX_O	-.06	.18	.75	.30	.12	-.08	.19	.75	.31	.14	-.07	.16	.71	.30	.07	-.14	.21	.78	.08	.12	-.02	.31	(.83)										
24. HEX_A	-.20	.07	.09	.43	-.01	-.21	.09	.11	.39	.00	-.18	.06	.10	.38	-.03	-.26	.25	.13	.61	.08	-.03	.16	.21	(.81)									
25. HEX_C	-.25	.07	.07	.24	.79	-.26	.11	.05	.22	.76	-.21	.06	.04	.21	.77	-.32	.23	.02	.33	.82	.02	.17	.14	.12	(.84)								
26. HEX_H	-.25	-.05	-.02	.26	.25	-.23	-.02	-.02	.23	.28	-.15	-.02	-.04	.25	.23	-.27	.13	.06	.37	.31	-.15	.03	.12	.28	.33	(.76)							
27. BMQ Grade	-.16	-.07	.08	-.07	.23	-.16	-.04	.07	-.08	.23	-.17	.00	.08	-.11	.21	-.22	.00	.00	.01	.24	-.08	.04	.04	-.01	.30	.06	-						
28. SRF Grade	-.01	-.05	-.02	.01	.17	-.01	-.03	-.02	.01	.16	.01	-.01	-.03	-.03	.16	-.04	-.04	-.04	.06	.14	-.01	.04	-.02	.00	.22	.09	.61	(.94)					
29. Job Task	-.04	-.09	-.03	-.05	.12	-.04	-.06	-.03	-.05	.11	-.02	-.03	-.04	-.09	.13	-.04	-.07	-.05	-.01	.12	-.02	-.06	-.02	-.05	.20	.11	.53	.76	-				
30. Context	-.02	-.03	-.03	.05	.21	-.02	.00	-.02	.04	.19	.01	.01	-.03	.00	.19	-.06	-.03	-.05	.09	.16	.02	.07	-.02	.02	.23	.10	.58	.95	.67	(.85)			
31. Pers Dspln	.01	-.06	-.01	-.01	.13	.01	-.04	-.01	-.01	.12	.03	-.03	-.02	-.04	.11	-.02	-.04	-.03	.05	.11	-.02	.02	-.01	.00	.18	.06	.57	.97	.68	.86	(.90)		
32. Org Dev	.37	.00	.02	-.17	-.38	.36	-.02	.01	-.15	-.40	.30	-.02	.01	-.14	-.38	.36	-.13	-.01	-.29	-.51	.20	-.07	-.06	-.21	-.45	-.43	-.08	-.04	-.08	-.05	-.03	(.83)	
33. Int Dev	.29	.04	-.10	-.26	-.29	.27	.02	-.11	-.22	-.30	.24	.03	-.09	-.24	-.28	.31	-.13	-.14	-.42	-.39	.05	-.07	-.20	-.44	-.37	-.36	-.01	.04	.02	.02	.05	.70	(.83)
M	3.12	4.50	4.38	5.61	5.23	3.01	4.56	4.42	5.67	5.35	2.94	4.59	4.56	5.60	5.08	2.46	3.62	3.26	3.67	3.81	2.79	3.32	3.46	3.23	3.63	3.66	81.73	3.14	3.15	3.10	3.17	1.72	1.73
SD	1.23	.99	1.10	.68	.81	1.13	1.00	1.18	.69	.74	1.15	1.08	1.21	.73	.93	.64	.48	.54	.48	.52	.58	.53	.59	.53	.50	.52	4.90	.67	.90	.68	.68	.51	.55

Notes. Listwise *N*=254; $r \geq .13$, $p < .05$; $r \geq .16$, $p < .01$; $r \geq .20$, $p < .001$; TSD = Trait Self-Descriptive Inventory, NEO = NEO-FFI, HEX = HEXACO PI, Neuroticism; E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, HEX_N = Emotionality, H = Honesty-Humility; BMQ Grd = Basic Military Qualification Course final grade; SRF Grade = mean composite score of the 12 BMQ Supervisor Rating Form dimensions; Job Task = SRF item assessing general job task proficiency; Context = Contextual Performance; Pers Dspln = mean composite score of SRF dimensions that comprise personal discipline (counterproductive workplace behaviours); Org Dev = Organizational Deviance; Int Dev = Interpersonal Deviance. Cronbach's alphas are in parentheses along the diagonal. Correlations in bold indicate correlations between respective FFM factors.

respectively; Agreeableness, $r = .55$, $r = .54$, $r = .49$, respectively; and Conscientiousness,

$r = .77$, $r = .78$, $r = .74$, respectively), and BMQ candidates (Neuroticism, $r = .82$,

$r = .82$, $r = .79$, respectively; Extraversion, $r = .63$, $r = .62$, $r = .56$, respectively;

Openness, $r = .75$, $r = .76$, $r = .73$, respectively; Agreeableness, $r = .64$, $r = .61$, $r = .56$,

respectively; and Conscientiousness, $r = .78$, $r = .77$, $r = .76$, respectively). The

relationships among the TSD factors and the unrelated NEO-FFI factors were smaller in

magnitude.

The TSD factors were highly correlated with their associated factors on the

HEXACO for IAP candidates (Neuroticism, $r = .64$, $r = .64$, $r = .66$, respectively;

Extraversion, $r = .81$, $r = .81$, $r = .77$, respectively; Openness, $r = .72$, $r = .71$, $r = .65$,

respectively; Agreeableness, $r = .41$, $r = .41$, $r = .42$, respectively; and Conscientiousness,

$r = .78$, $r = .75$, $r = .74$, respectively), and BMQ candidates (Neuroticism[9], $r = .64$, $r =$

$.64$, $r = .66$, respectively; Extraversion, $r = .79$, $r = .78$, $r = .72$, respectively; Openness, r

$= .75$, $r = .75$, $r = .71$, respectively; Agreeableness, $r = .43$, $r = .39$, $r = .38$, respectively;

and Conscientiousness, $r = .79$, $r = .76$, $r = .77$, respectively). No specific hypotheses

were made pertaining to Honesty-Humility correlates with the TSD. However, for IAP

candidates, Honest-Humility correlated moderately with the 75-, 60, and 50-item TSD

factors of Neuroticism ($r = -.33$, $r = -.30$, $r = -.24$, respectively), Conscientiousness ($r =$

$.28$, $r = .30$, $r = .25$, respectively), and Agreeableness ($r = .23$, $r = .26$, $r = .34$,

respectively). Similarly, for BMQ candidates, Honest-Humility correlated moderately

with the 75-, 60, and 50-item TSD factors of Neuroticism ($r = -.25$, $r = -.23$, $r = -.15$,

respectively), Conscientiousness ($r = .25$, $r = .28$, $r = .23$, respectively), and

Agreeableness ($r = .26$, $r = .23$, $r = .25$, respectively).

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[9] The Emotionality factor of the HEXACO corresponds to the Neuroticism factor of the TSD.

Dimensionality of Job Performance

Prior to examining the relationships among the personality variables and the job performance criteria extracted from the SRFs, the dimensionality of the SRFs was examined via Confirmatory Factor Analysis using EQS 6.1 (Bentler & Wu, 2004). In accordance with the job performance models of Campbell (1990) and Borman and Motowidlo (1993), the job performance dimensions of the IAP and BMQ SRFs were expected to conform to a three factor structure consisting of *General Job Task Performance, Contextual Behaviour,* and *Personal Discipline.* The covariance matrix was used for the analyses using the maximum-likelihood (ML) method. In all cases, the factor variance was set to 1.00 to set the scale for the model. For the one-factor models, all job performance items of the IAP and BMQ SRFs (see Figures 1 and 3, respectively) were loaded onto a job performance factor, whereas for the three-factor models (see Figures 2 and 4, respectively), the relevant dimensions were loaded onto the factors of *General Job Task Proficiency, Contextual Performance,* and *Personal Discipline.* Model fit was assessed using the SRMR, CFI, and RMSEA (Satorra and Bentler Scaled Statistic (S-Bχ^2) was used in the calculation of the CFI and RMSEA). Due to the fact that the three-factor models are nested within the one-factor model, a Chi-Square difference test was utilized in order to determine the best fitting model (Tabachnick & Fiddell, 2001). The results of the CFAs are presented in Table 7.

For the IAP SRF, the one-factor model indicated poor fit to the data on two of the three indices ($\chi^2 = 213.78$; $df = 90$; SRMR = .07; CFI = .89; RMSEA = .10), whereas the three-factor model indicated marginal to good fit on two of the three indices ($\chi^2 = 176.93$; $df = 87$; SRMR = .06; CFI = .92; RMSEA = .09). The Chi-Square difference test

revealed that the three-factor model of job performance fit the data significantly better than did the one-factor model (χ^2_{difference} = 36.95; df = 3; p < .001).

For the BMQ SRF, the one-factor model indicated marginal to good fit (χ^2 = 209.39; df = 54; SRMR = .05; CFI = .92; RMSEA = .07), and the three-factor model indicated marginal to good fit (χ^2 = 207.59; df = 51; SRMR = .05; CFI = .92; RMSEA = .08) on two of the three indices. The Chi-Square difference test revealed that the there was no significant difference in the fit of the two models to the data (χ^2_{difference} = 1.80; df = 3; ns). Due to the fact that there was a theoretical basis for examining the three-factor job performance model (Borman & Motowidlo, 1993) in conjunction with the fact that the three-factor model fit the data significantly better than the one-factor model for the IAP SRF, and the three-factor model is not statistically different than the one-factor model for

Table 7

Goodness-of-Fit Indices for the 1- and 3-Factor SRF Measure of Job Performance

Model	χ^2	df	SRMR[a]	RMSEA	CFI	χ^2_{diff}
IAP:						
1. 1-factor model	213.78	90	.07	.10	.89	
2. 3-factor model	176.93	87	.06	.09	.92	
Difference between Model 1 & Model 2						36.85*
BMQ:						
1. 1-factor model	209.39	54	.05	.07	.92	
2. 3-factor model	207.59	51	.05	.08	.92	
Difference between Model 1 & Model 2						1.80

Note. IAP N = 107; BMQ N = 256; [a] Robust statistics were not calculated for the SRMR. SRMR - Standardized Root Mean Square residual, RMSEA - Root Mean Square Error of Approximation, CFI - Comparative Fit Index.

Figure 1

One-Factor Model of Job Performance for IAP Candidates
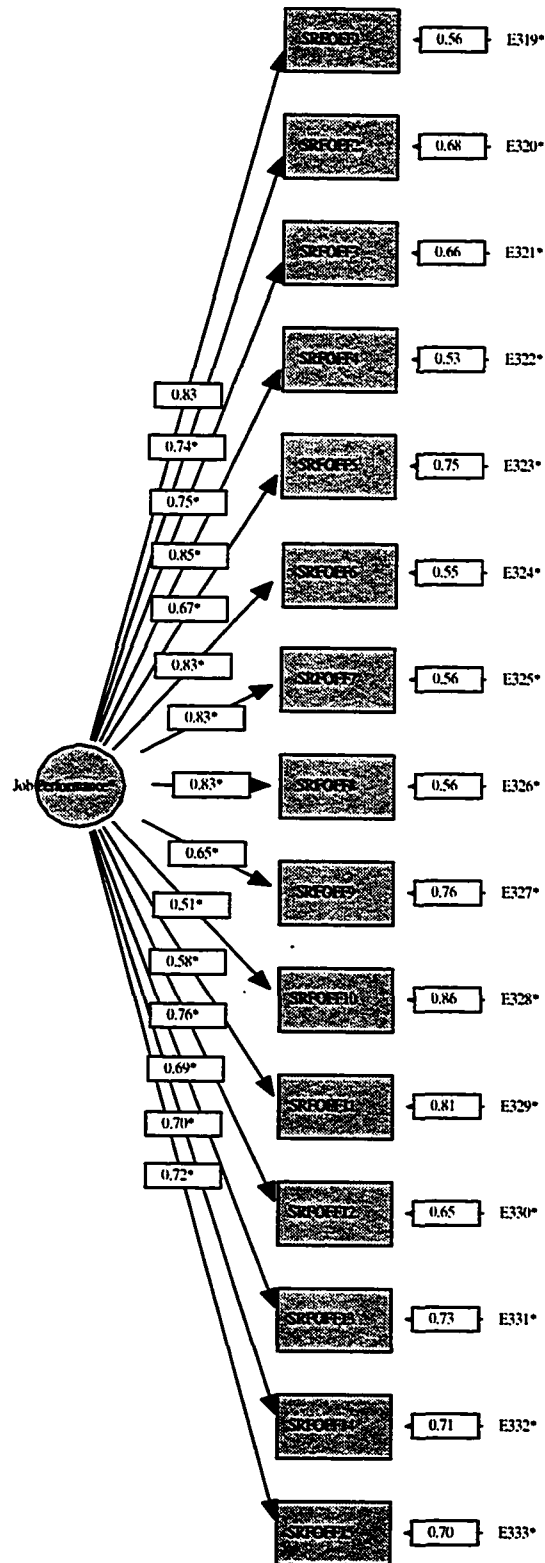
Note. *p < .05; N = 107.

Figure 2

Three- Factor Model of Job Performance for IAP Candidates.
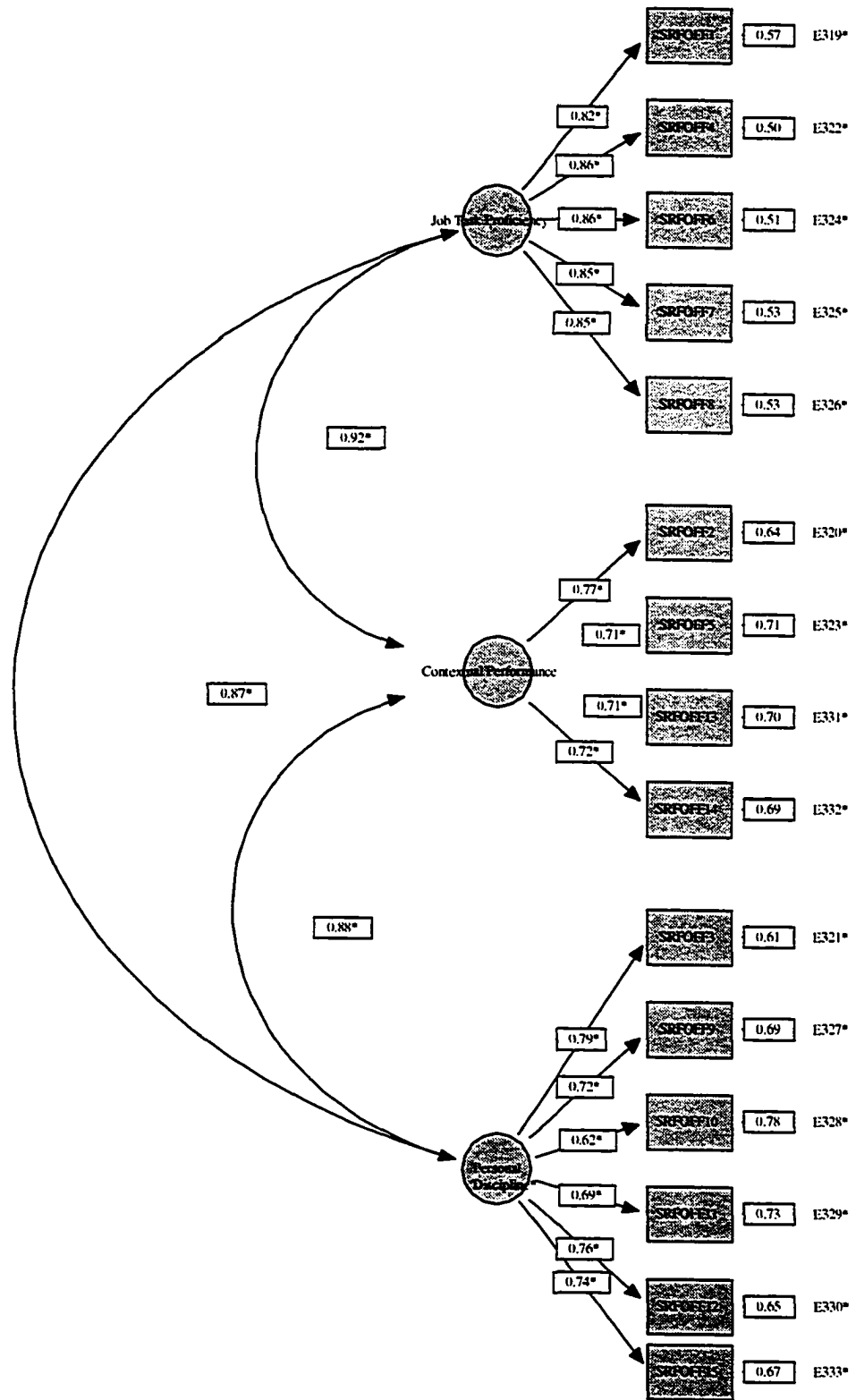
Note. *p < .05. N = 107.

Figure 3

One- Factor Model of Job Performance for BMQ Candidates.

SRENCM1	0.69	E305*
SRENCM2	0.64	E306*
SRENCM3	0.65	E307*
SRENCM4	0.68	E308*
SRENCM5	0.69	E309*
SRENCM6	0.68	E310*
SRENCM7	0.59	E311*
SRENCM8	0.68	E312*
SRENCM9	0.68	E313*
SRENCM10	0.65	E314*
SRENCM11	0.77	E315*
SRENCM12	0.59	E316*

Job Performance loadings: 0.72*, 0.77*, 0.76*, 0.73*, 0.73*, 0.73*, 0.81*, 0.73*, 0.74*, 0.76*, 0.64*, 0.81*
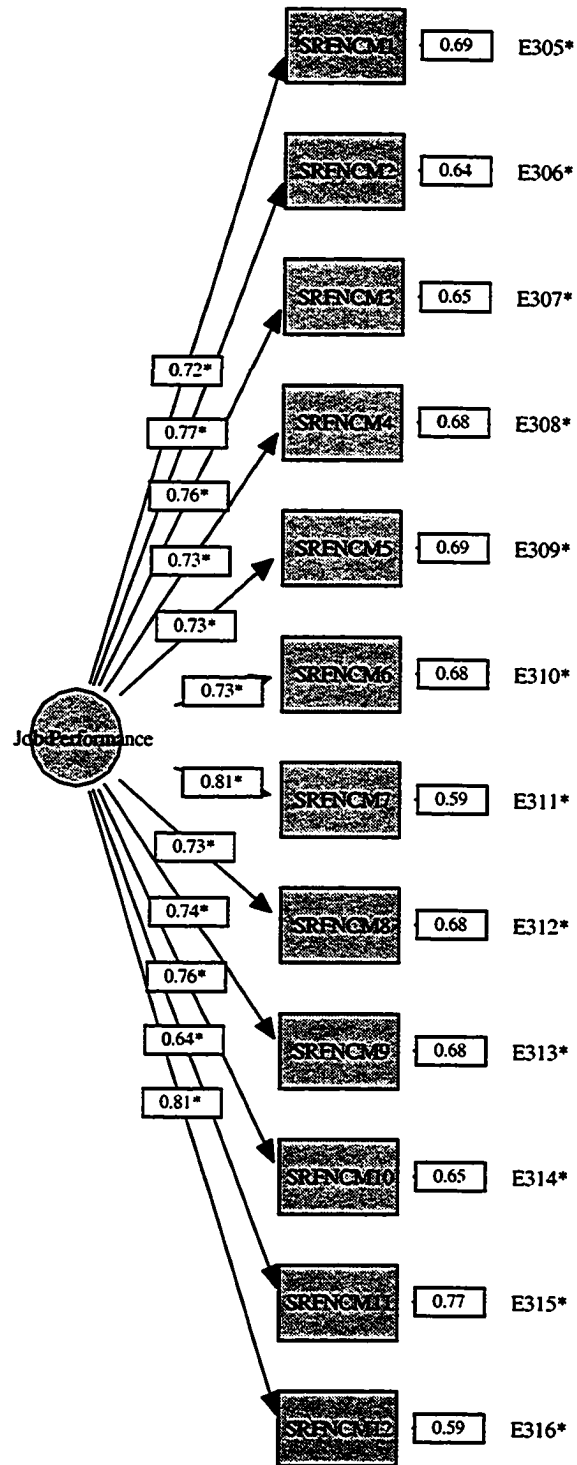
Note. $*p < .05$; $N = 256$.

Figure 4

Three- Factor Model of Job Performance for BMQ Candidates.
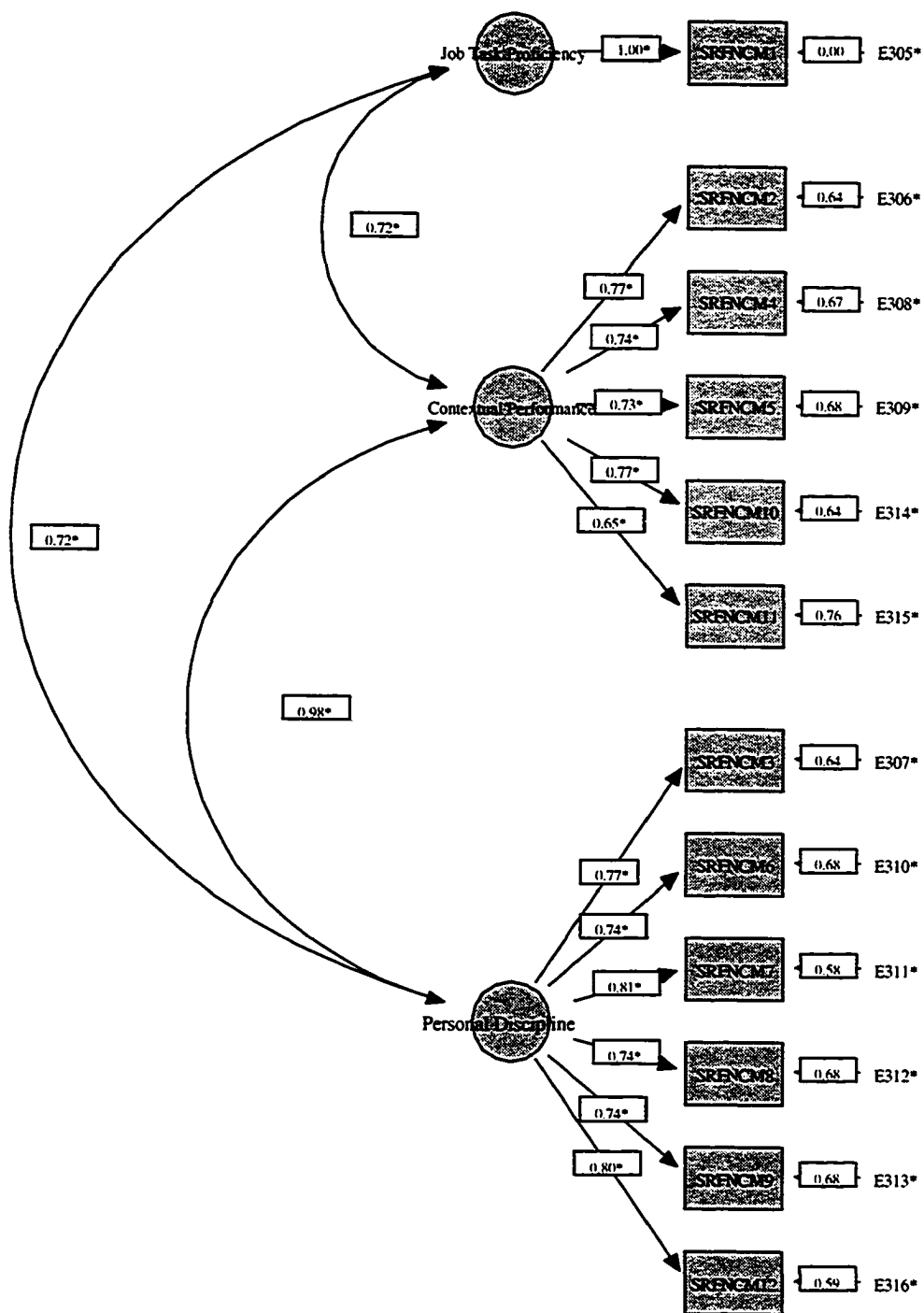
Note. * *p* < .05; *N* = 256.

the BMQ SRF, the decision was made to examine the three factor model, in addition to

an overall job performance composite, of job performance for both samples.

Hierarchical Regression Analyses

For these analyses, age, sex, language, and education were entered at Step 1, and

cognitive ability (i.e., CFAT score) was entered at Step 2, in order to control for their

effects. At Step 3, the personality variables of interest were entered for the 75-, 60-, 50-

item TSD, NEO-FFI, and HEXACO, in separate regression analyses. For example, the

variables entered at Steps 1 and 2 remained the same throughout the analyses; however,

the variables entered at Step 3 changed in order to individually assess the effects of the

personality variables of interest for each personality inventory.

Counterproductive Workplace Behaviours. Hierarchical regression analyses were

conducted to assess the ability of Conscientiousness and Honesty-Humility to predict

counterproductive workplace behaviours as measured by the modified Bennett and

Robinson (2002) Measure of Workplace Deviance (i.e., *organizational deviance* and

interpersonal deviance) and the Supervisor Rating Form (i.e., the *personal discipline*

variable). The Conscientiousness factors of each of the five personality inventories (i.e.,

75-, 60-, and 50-item TSD; NEO-FFI; and HEXACO), and the Honesty-Humility factors

of the HEXACO were entered at Step 3, in six separate regression equations (see Table

8).

IAP Candidates. For officer candidates attending the IAP course, the demographic

variables accounted for a significant amount of variance in the MWD subscales of

Table 8

Hierarchical Multiple Regression for Conscientiousness and Honesty-Humility Predicting Counterproductive Workplace Behaviours

		IAP Candidates						BMQ Candidates					
		Measure of Workplace Deviance (N = 100)				Supervisor Ratings- Personal Discipline (N = 93)		Measure of Workplace Deviance (N = 434)				Supervisor Ratings- Personal Discipline (N = 226)	
		Organizational Deviance		Interpersonal Deviance				Organizational Deviance		Interpersonal Deviance			
Step	Variable	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
1	Demographic Variables		.12*		.10*		.11*		.04**		.07***		.03
	Age	-.31**		-.22		-.14		-.19***		-.16**		.03	
	Sex	.02		-.03		-.21		.03		-.01		.01	
	Language	-.30*		-.07		.32*		-.11*		-.20***		-.05	
	Education	.22		-.10		-.18		.05		-.01		.17*	
2	Cognitive Ability	-.09	.01	-.16	.03	.00	.00	.01	.00	-.01	.00	.01	.00
3a	TSD 75 - Conscientiousness	-.41***	.15***	-.08	.01	.13	.02	-.37***	.13***	-.28***	.07***	.13	.02
3b	TSD 60 - Conscientiousness	-.45***	.19***	-.11	.01	.14	.02	-.38***	.13***	-.28***	.07***	.12	.01
3c	TSD 50 - Conscientiousness	-.32**	.09**	-.05	.00	.12	.02	-.36***	.12***	-.26***	.06***	.10	.01
3d	NEO-FFI - Conscientiousness	-.31**	.07**	-.13	.01	.16	.02	-.51***	.23***	-.40***	.14***	.11	.01
3e	HEXACO - Conscientiousness	-.37***	.12***	-.11	.01	.14	.02	-.44***	.17***	-.33***	.10***	.17*	.03*
3f	HEXACO - Honesty-Humility	-.53***	.22***	-.34**	.09**	.15	.02	-.38***	.14***	-.34***	.11***	.07	.00

Note. *$p < .05$; ** $p < .01$; *** $p < .001$. For Sex, Male = 1, Female = 2; For Language, English = 1, French = 2.

organizational deviance, R^2 = .12, F (4, 95) = 3.37, p < .05, *interpersonal deviance*, R^2 =

.10, F (4, 95) = 2.69, p < .05, and the SRF *personal discipline* variable, R^2 = .11, F (4, 95)

= 2.61, p < .05. For organizational deviance, only age (β = -.31, p < .01), and language (β

= -30, p<.01) were significant predictors, such that both younger participants and English

speaking participants reported a higher frequency of organizational deviance behaviours.

For interpersonal deviance, none of the demographic variables were significant

predictors. For the SRF personal discipline variable, language was the only significant

demographic predictor, such that French speaking candidates were assessed as possessing

higher personal discipline. Cognitive ability was entered at Step 2, but it did not account

for any incremental variance in organizational deviance, ΔR^2 = .01, F_{change} = .87, *ns*,

interpersonal deviance, ΔR^2 = .00, F_{change} = .04, *ns*, or SRF personal discipline variable,

ΔR^2 = .00, F_{change} = .00, *ns*.

In Step 3 of the six analyses, the Conscientiousness factor of the 75-, 60-, 50-item

TSD, NEO-FFI, and both the Conscientiousness and Honesty-Humility factors of the

HEXACO accounted for a significant amount of incremental variance in organizational

deviance (ranging from ΔR^2 = .07 to ΔR^2 = .22, p < .01). However, none of the

Conscientiousness factors nor the Honesty-Humility factor accounted for significant

incremental variance in interpersonal deviance.

BMQ Candidates. For NCM candidates attending the BMQ course, the

demographic variables accounted for a significant amount of variance in the MWD

subscales of organizational deviance, R^2 = .04, F (4, 429) = 4.79, p < .01, and

interpersonal deviance, R^2 = .07, F (4, 429) = 8.10, p < .001. Together, these variables did

not account for significant variance in the SRF personal discipline variable, R^2 = .03, F

(4, 221) = 1.87, *ns*. For both organizational and interpersonal deviance, age (β = -.19,

p<.001; β = -.16, *p*<.001, respectively) and language (β = -.11, *p*<.05; β = -.20, *p*<.001,

respectively) were significant predictors, such that both younger participants and

English speaking participants reported a higher frequency of organizational and

interpersonal deviance behaviours. Neither sex nor education level were significant

predictors of organizational deviance nor interpersonal deviance, although education

emerged as a significant predictor (β = -.17, *p*<.05) of the SRF personal discipline

variable. Cognitive ability was entered at Step 2, but it did not account for any

incremental variance in organizational deviance, ΔR^2 = .00, F_{change} = .04, *ns*, interpersonal

deviance, ΔR^2 = .00, F_{change} = .04, *ns*, or the SRF personal discipline variable, ΔR^2 = .00,

F_{change} = .02, *ns*.

In Step 3 of the six analyses, the Conscientiousness factors of the 75-, 60-, 50-

item TSD, NEO-FFI, and both the Conscientiousness and Honesty-Humility factors of

the HEXACO accounted for a significant amount of incremental variance in

organizational deviance (ranging from ΔR^2 = .12 to ΔR^2 = .23, *p* < .001), and

interpersonal deviance (ranging from ΔR^2 = .06 to ΔR^2 = .14, *p* < .001). However, only

the Conscientiousness factor of the HEXACO predicted incremental variance in the SRF

personal discipline variable, ΔR^2 = .03, F_{change} = 6.01, *p* < .05.

Job Performance. In order to test the hypothesis that the Conscientiousness,

Neuroticism, and Openness factors of the five personality inventories are predictive of

job performance, a series of hierarchical regression analyses were conducted with four

job performance dependent variables. The first job performance variable was the final

overall grade from the official course report, *Course Report Grade*, and the remaining

three job performance variables were computed from the behaviourally anchored Supervisor Rating Form. Specifically, *General Job Task Proficiency, Contextual Performance,* and composite *Overall Performance* variables (which were computed from the 12 BMQ and 15 IAP job performance dimensions as described in the Method section) were used in the analyses. At Step 3, the Conscientiousness, Neuroticism, and Openness factors of each of the five personality inventories (i.e., 75-, 60-, and 50-item TSD; NEO-FFI; and HEXACO) were entered in five separate regression equations for IAP and BMQ candidates (see Table 9 and Table 10).

IAP Candidates. For officer candidates attending the IAP course, the demographic variables accounted for a significant amount of variance in *Course Report Grade* (R^2 = .11, $p < .05$), *Overall Performance* (R^2 = .11, $p < .05$), and *General Job Task Proficiency* (R^2 = .11, $p < .05$) in each of the three analyses. Specifically, age was a significant predictor of *General Job Task Proficiency* (β = -.24, $p < .05$) and language was a significant predictor of both *Overall Performance* (β = .34, $p < .05$), and *General Job Task Proficiency* (β = .32, $p < .05$), such that younger candidates and French speaking candidates were rated higher on *General Job Task Proficiency*, and French speaking candidates were rated higher on ratings of *Overall Performance*. The demographic variables failed to account for significant variance in *Contextual Performance*, and none of the demographic variables uniquely predicted *Course Report Grade*. Cognitive ability was entered at Step 2 and accounted for significant incremental variance in *Course Report Grade*, ΔR^2 = .05, F_{change} = 4.82, $p < .05$, such that higher cognitive ability scores predicted higher course report grades. However, cognitive ability did not account for

Table 9

Hierarchical Multiple Regression for Conscientiousness, Neuroticism, and Openness Factors Predicting IAP Performance

Step	Variable	Course Report Grade (N = 93)		Supervisor Rating of Overall Performance (N = 92)		General Job Task Proficiency (N = 92)		Contextual Performance (N = 92)	
		β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
1	Demographic Variables		.11*		.11*		.11*		.06
	Age	-.22		-.20		-.24*		-.16	
	Sex	-.21		-.14		-.11		-.02	
	Language	.14		.34*		.32*		.28	
	Education	-.04		-.17		-.13		-.15	
2	Cognitive Ability	.22*	.05*		.00	.01	.00	.12	.01
3a	Personality (TSD 75)		.01		.02		.01		.02
	Conscientiousness	.07		.15		.12		.14	
	Neuroticism	-.04		.06		.03		.08	
	Openness	.04		-.02		-.04		-.02	
3b	Personality (TSD 60)		.01		.02		.01		.02
	Conscientiousness	.06		.15		.12		.13	
	Neuroticism	-.05		.05		.01		.08	
	Openness	.02		-.03		-.06		-.03	
3c	Personality (TSD 50)		.00		.02		.01		.03
	Conscientiousness	.05		.14		.11		.15	
	Neuroticism	-.01		.11		.07		.14	
	Openness	.04		-.01		-.04		-.01	
3d	Personality (NEO-FFI)		.03		.02		.02		.01
	Conscientiousness	.15		.15		.13		.07	
	Neuroticism	-.01		.03		-.03		.04	
	Openness	.10		.10		.06		.07	
3e	Personality (HEXACO)		.01		.02		.02		.01
	Conscientiousness	.15		.10		.13		-.01	
	Emotionality	.01		.12		.06		.11	
	Openness	.00		.07		.03		.05	

Note. $*p < .05$; $**p < .01$; $***p < .001$; For Sex, Male = 1, Female = 2; For Language, English = 1, French = 2.

Table 10

Hierarchical Multiple Regression for Conscientiousness, Neuroticism, and Openness Factors Predicting BMQ Performance

Step	Variable	Course Report Grade (N = 358)		Supervisor Rating of Overall Performance (N = 224)		General Job Task Proficiency (N = 224)		Contextual Performance (N = 224)	
		β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
1	Demographic Variables		.11***		.03		.02		.02
	Age	.06		.05		.06		.04	
	Sex	-.02		-.04		.03		-.06	
	Language	-.12*		-.04		-.05		-.06	
	Education	.31***		.16		.09		.12	
2	Cognitive Ability	.27***	.07***	.02	.00	.09	.01	.04	.00
3a	Personality (TSD 75)		.03**		.03		.02		.05*
	Conscientiousness	.15**		.19**		.15*		.23**	
	Neuroticism	-.10*		.06		.04		.05	
	Openness	-.01		-.05		-.09		-.06	
3b	Personality (TSD 60)		.03**		.03		.02		.04*
	Conscientiousness	.14**		.18*		.15*		.21**	
	Neuroticism	-.09		.06		.04		.04	
	Openness	-.01		-.04		-.09		-.03	
3c	Personality (TSD 50)		.03**		.03		.02		.04
	Conscientiousness	.14**		.15*		.14*		.19**	
	Neuroticism	-.08		.08		.04		.07	
	Openness	-.01		-.04		-.09		-.03	
3d	Personality (NEO-FFI)		.04**		.02		.02		.02
	Conscientiousness	.13**		.16*		.11		.16*	
	Neuroticism	-.11*		.05		.02		.03	
	Openness	-.06		-.05		-.09		-.06	
3e	Personality (HEXACO)		.04***		.04*		.04*		.05**
	Conscientiousness	.21***		.22**		.21**		.24**	
	Emotionality	-.06		.01		.00		.04	
	Openness	-.01		-.04		-.07		-.04	

Note. $*p < .05$; $** p < .01$; $*** p < .00$; For Sex, Male = 1, Female = 2; For Language, English = 1, French = 2.

significant incremental variance in *Overall Performance, General Job Task Proficiency,* or *Contextual Performance.*

In Step 3 of the five analyses, the personality factors of Conscientiousness, Neuroticism, and Openness were entered into the regression equation. Jointly, these three personality factors failed to account for a significant increment in variance in the job performance criteria.

BMQ Candidates. For NCMs attending the BMQ course, the demographic variables accounted for a significant amount of variance at Step 1 in *Course Report Grade,* $R^2 = .11$, $F = 11.01$, $p < .001$. Specifically, language ($\beta = -.12$, $p < .05$) and education level ($\beta = .31$, $p < .001$) were significant predictors of *Course Report Grade,* such that English candidates and candidates with higher levels of education had higher course report grades. The demographic variables failed to account for a significant amount of variance in *General Job Task Proficiency, Overall Performance,* or *Contextual Performance.* Cognitive ability was entered at Step 2 and accounted for significant incremental variance in *Course Report Grade,* $\Delta R^2 = .07$, $F_{change} = 23.38$, $p < .001$, such that higher scores on the CFAT predicted higher course report grades. However, cognitive ability did not account for incremental variance in *Overall Performance, General Job Task Proficiency,* or *Contextual Performance.*

In Step 3 of the five analyses, the personality factors of Conscientiousness, Neuroticism, and Openness were entered into the regression equation. The personality variables accounted for significant incremental variance in *Course Report Grade,* ranging from $\Delta R^2 = .03$ to $\Delta R^2 = .04$, all $p < .01$. Specifically, Conscientiousness was a significant predictor of *Course Report Grade* for all personality measures ($\beta = .13$ to $\beta = .21$, all $p <$

.01), such that those with higher self-reported Conscientiousness achieved higher course report grades. Additionally, the Neuroticism factors of the 75-item TSD and NEO-FFI were significant predictors of *Course Report Grade* (β = -.10, p < .05; and β = -.11, p < .05; respectively), such that individuals with lower self-reported Neuroticism scores achieved higher course report grades. Although only the HEXACO accounted for significant incremental variance in Step 3 for *Overall Performance*, ΔR^2 = .04, F_{change} = 3.23, p < .05, and *General Job Task Proficiency*, ΔR^2 = .04, F_{change} = 4.07, p < .05, the Conscientiousness factors of all personality measures were significant predictors of *Overall Performance* (β = .15 to β = .22, all p < .05). Moreover, with the exception of the Conscientiousness factor of the NEO-FFI, all other Conscientiousness factors were significant predictors of *General Job Task Proficiency* (β = .14 to β = .21, all p < .05). None of the other personality factors were significant predictors of *Overall Performance* or *General Job Task Proficiency*. With the exception of the 50-item TSD and NEO-FFI, the three personality factors accounted for significant incremental variance in Step 3 for *Contextual Performance* (ΔR^2 = .05, ΔR^2 = .04, and ΔR^2 = .05, p < .05 for the 75-item TSD, 60-item TSD, and HEXACO, respectively). However, the Conscientiousness factors of all personality inventories were significant predictors of *Contextual Performance* (β = .16 to β = .24, all p < .05), such that candidates with higher self-report levels of Conscientiousness are rated as having higher contextual performance.

Leadership. In order to test the hypothesis that Extraversion predicts leadership performance of officer candidates attending the IAP, a series of hierarchical regression analyses were conducted with two leadership performance criteria. The first criterion variable was the leadership score earned by each IAP candidate of the formal course

report. The *General Job Task Proficiency* composite computed from the SRF was used as a second criterion due to the fact that four of the five dimensions measure leadership directly (*leadership, command-planning, command-delegating,* and *command-supervising*)[10]. The demographic variables accounted for significant variance in both *Leadership – Course Grade,* $R^2 = .12$, $F = 2.67$, $p < .05$, and SRF assessments, $R^2 = .11$, $F = 2.81$, $p < .05$. Specifically, language was the only significant predictor for *Leadership – Course Grade* ($\beta = .39$, $p < .01$), whereas both age ($\beta = -.24$, $p < .05$) and language ($\beta = .32$, $p < .05$) were significant predictors for SRF assessments. Therefore, French speaking candidates received higher leadership course grades and higher SRF leadership assessments from supervisors, and younger candidates received higher SRF leadership assessments from supervisors. Cognitive ability was entered at Step 2, but it did not account for any significant incremental variance in either leadership criterion variable. The Extraversion factors of each of the personality inventories were entered at Step 3 in five separate regressions (see Table 11). Only the 50-item TSD accounted for significant incremental variance in *Leadership – Course Grade,* $\Delta R^2 = .04$, $F_{change} = 4.20$, $p < .05$. Specifically, candidates with higher self-report Extraversion scores achieved higher leadership course grades ($\beta = .21$, $p < .05$). However, when SRF assessments were used as the criterion, the Extraversion factors of all personality inventories, with the exception of the NEO-FFI, accounted for significant incremental variance (ranging from $\Delta R^2 = .06$ to $\Delta R^2 = .09$, all $p < .05$). Again, examination of the beta weights[11] indicated that candidates

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[10] The analysis was conducted using a composite of the four leadership dimensions alone with a similar pattern of results.
[11] The beta weight for the NEO-FFI Extraversion factor was not included.

Table 11

Hierarchical Multiple Regression for Extraversion Factors Predicting Leadership Assessments of IAP Candidates (N = 92)

Step	Variable	Leadership Performance (Course Report)		Supervisor Rating Form Assessments	
		β	ΔR^2	β	ΔR^2
1	Demographic Variables		.12*		.11*
	Age	-.17		-.24*	
	Sex	-.10		-.11	
	Language	.39**		.32*	
	Education	-.05		-.13	
2	Cognitive Ability	.16	.02	.01	.00
3a	Extraversion (TSD 75)	.19	.03	.31**	.09**
3b	Extraversion (TSD 60)	.20	.04	.32**	.09**
3c	Extraversion (TSD 50)	.21*	.04*	.30**	.08**
3d	Extraversion (NEO-FFI)	.19	.03	.18	.03
3e	Extraversion (HEXACO)	.13	.02	.25*	.06*

Note. $*p < .05$; $**p < .01$; $***p < .001$.

with higher self-report Extraversion scores are rated as having greater leadership ability by their supervisors (beta weights ranged from $\beta = .25$ to $\beta = .32$, all $p < .01$).

Discussion

The purpose of this study was to examine the psychometric properties of three personality inventories in order to determine their potential utility for selection, and to assess their ability to explain variance in various job-related criteria, beyond the variance explained by cognitive ability. Specifically, this study assessed the concurrent validity of three versions of the TSD, the NEO-FFI, and the HEXACO in predicting general task proficiency, contextual performance, and personal discipline (i.e., counterproductive workplace behaviours). In addition to formal course grades and a self-report measure of CWBs, this study incorporated a Supervisor Rating Form that included all of these three

types of job-related criteria in order to better represent the job performance domains of

the BMQ and IAP courses in the Canadian Forces.

Psychometric Properties and Model Fit

Examination of the psychometric properties of the 75-, 60-, and 50-item TSD

versions, the NEO-FFI, and HEXACO revealed that all measures demonstrated good

internal consistency. However, confirmatory factor analyses produced mixed results for

the fit of the five factor (TSD and NEO-FFI) and six factor (HEXACO) models to the

data. Specifically, the three TSD versions and NEO-FFI generally indicated adequate fit

on two of the three fit indices reported (i.e., SRMR and RMSEA), whereas the third

suggested poor fit (i.e., CFI). The HEXACO demonstrated poor model fit on two of the

three indices. However, unlike the TSD versions and NEO where individual items were

loaded onto the appropriate factors, the HEXACO was examined by loading the facet

scores onto the appropriate factors. Accordingly, it is difficult to directly compare the fit

of the HEXACO to that of the TSD versions and NEO-FFI.

Overall, there is partial support for Hypothesis 1a, which addressed the factor

structure of the personality measures, in that the three TSD versions and the NEO-FFI

demonstrated some evidence of fitting the five factor model; however, there was little

support for a six-factor model when examining the HEXACO using facet scores. More

specific examination of the factor-level items may help us to understand better the

specific fit of each factor, in addition to helping us identify problematic items for

subsequent removal or improvement. Furthermore, all three TSD versions demonstrated

convergent validity with their respective factors on the NEO-FFI and HEXACO, such

that the correlations with related factors were higher than correlations among unrelated

factors (i.e., discriminant validity coefficients), lending support to Hypothesis 1b.

Job Performance Dimensionality

Confirmatory factor analyses provided some support for the notion that a three-

factor model of job performance was superior to a one-factor model when examining the

SRFs, especially for IAP candidates. In this study, the pattern of results for the one-factor

model was similar to the pattern of results exhibited by the specific subscales of *General*

Job Task Proficiency and *Contextual Performance*. The one exception to this pattern was

the fact that the Conscientiousness factors of all but one measure (the HEXACO) failed

to predict the *Personal Discipline* (i.e., CWB) dimension for BMQ candidates, despite

the high correlation between *Contextual Performance* and *Personal Discipline*.

With respect to the dimensionality of job performance, it is important to note that

Visweswaran et al. (2005) concluded that the existence of a general job performance

factor did not necessarily infer the non-existence of underlying job performance

dimensions, adding that the research goals should dictate the level of analysis. Moreover,

research has shown that contextual behaviours account for significant unique variance in

performance evaluations (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Therefore,

further exploration of the SRF dimensions is warranted for both officers and NCMs, as

are methods to account for measurement error.

Predicting Counterproductive Workplace Behaviours

For both IAP and BMQ candidates, the Conscientiousness factors from all

measures, and the Honesty-Humility factor of the HEXACO were significant predictors

of organizational deviance, even after controlling for demographic variables and

cognitive ability, thus supporting Hypotheses 2. For IAP candidates, the Honesty-

Humility factor of the HEXACO was a significant predictor of interpersonal deviance

whereas all of the Conscientiousness factors and the Honesty-Humility factor of the

HEXACO were significant predictors of interpersonal deviance for BMQ candidates. For

BMQ candidates, the Conscientiousness factor of the HEXACO predicted *Personal*

Discipline as rated by course instructors on the SRF. In the context of initial military

training, self-report is likely a better source of examining counterproductive behaviours

when compared to supervisor ratings because both the IAP and BMQ candidates were

attending highly structured basic training courses, which do not afford much of an

opportunity for, or tolerance of, inappropriate behaviours. In other words, it is very

unlikely that course candidates would exhibit poor *Personal Discipline* in the presence of

their instructors, but they may exhibit these behaviours when their instructors were

absent. Furthermore, for the most part, job performance criterion information was not

available for candidates who were removed from training (and who may have engaged in

more CWB).

Although Salgado (2002) found that Conscientiousness predicted deviant

behaviours, those deviant behaviours were measured as one category and not broken

down into organizational deviance and interpersonal deviance as proposed by Bennett

and Robinson (2002). Accordingly, the human interaction component associated with

interpersonal deviance may be more closely related with other personality factors and

explain why Honesty-Humility, a construct that has been linked with anti-social

behaviour (Lee et al., 2003), was the only variable that predicted interpersonal deviance

for both IAP and BMQ candidates. Although not hypothesized, the FFM factor of

Agreeableness correlated significantly with both organizational deviance (ranging from r = -.21 to r = -.35) and interpersonal deviance (ranging from r = -.25 to r = -.46). Therefore, Agreeableness may prove to be another effective factor in predicting workplace deviance in general, and specifically, interpersonal deviance due to the potential for this personality factor to tap into the human interaction component of workplace deviance. Future research should examine these relationships more closely.

Predicting Job Performance

In order to examine the incremental validity of personality, the predictive ability of cognitive ability was first examined. Cognitive ability was a significant predictor of the *Course Report Grade* for both IAP and BMQ candidates, but it was not a significant predictor of the supervisor ratings of *Overall Performance*. These results regarding the *Course Report Grade* are consistent with previous research linking cognitive ability, as measured by the CFAT, with job task performance (Black, 1999; O'Keefe, 1998). Conversely, the fact that cognitive ability did not predict the SRF dimensions could be due to the fact that academic results (i.e., formal tests) are calculated into the course grades of both IAP and BMQ candidates, whereas the SRF contains more job-relevant dimensions and is based solely on observable behaviours. Accordingly, although there were no formal hypotheses regarding cognitive ability, these findings lend support to the use of comprehensive multi-dimensional job performance criteria, regardless of whether or not a general job performance factor emerges, such that the multi-dimensional assessment approach increases the potential for criterion relevance.

Interestingly, the pattern of prediction was similar when using *Course Report Grade* and the *Overall Job Performance* composite of the SRF as dependent measures

(see Tables 9, 10, and 11), although the personality-performance relationship was generally weaker when using the *Course Report Grade*. These two job performance criteria were significantly correlated for both IAP and BMQ assessments ($r = .60$, $r = .61$; respectively), suggesting that both are measuring overall performance. It is important to note, however, that the SRF was distributed to IAP and BMQ supervisors at approximately the same time the course report information was completed (including the 10% grade assigned by the supervisors). Accordingly, the SRF dimensions and behavioural anchors may have influenced supervisor ratings on the course reports. Regardless, this finding suggests that the inclusion of specific job-relevant dimensions has the potential to improve the current course reports for both IAP and BMQ candidates.

IAP Candidates. Conscientiousness and Neuroticism have been characterized as generalizable predictors of job performance across occupations and groups, with higher levels of Conscientiousness, and lower levels of Neuroticism linked with higher job performance (Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997; Tett et al., 1991). However, none of the personality factors that were included in the regression analyses (i.e., Conscientiousness, Neuroticism, and Openness) emerged as significant predictors of the job performance criteria for IAP candidates. Thus, Hypothesis 3a was not supported in this study for IAP candidates. A possible explanation for this result may be that the small IAP sample size reduced the power to detect significance. Also, performance data was generally available only for those candidates who successfully completed the course and the initial selection process for officer candidates is extremely competitive, resulting in only those deemed to have the highest potential for success being offered enrolment. Similarly, although higher self-report Openness scores have

been linked with successful training performance (Barrick & Mount, 1991; Salgado, 1997), it is possible that individuals who are less open to new experiences would not aspire to a career in the military.

However, Extraversion (with the exception of the Extraversion factor of the NEO-FFI) did emerge as a significant predictor of SRF assessments of leadership performance. Although the Extraversion factor of the 50-item TSD was the only factor to predict *Leadership – Course Grade*, sample size could be the reason why the Extraversion factors of the other TSD versions and NEO-FFI failed to reach significance. Accordingly, there is partial support for Hypothesis 3b.

BMQ Candidates. Conversely, and consistent with the previous research (Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997; Tett et al., 1991), Conscientiousness generally predicted job performance for BMQ candidates. With the exception of the Conscientiousness factor of the NEO-FFI failing to predict *General Job Task Proficiency*, Conscientiousness emerged as a significant predictor for all job performance criteria for BMQ candidates, such that higher self-report Conscientiousness scores were associated with higher formal *Course Report Grade* scores as well as higher supervisor ratings of *General Job Task Proficiency* and *Contextual Performance*, even after controlling for demographic variables and cognitive ability. These results add to the abundance of research linking Conscientiousness to job performance criteria (e.g., Barrick & Mount, 1991; Barrick et al., 2001; Salgado, 1997; Tett et al., 1991).

Additionally, the Neuroticism factors of the 75-item TSD and NEO-FFI were significant predictors of *Course Report Grade* such that lower self-report scores of neuroticism were associated with higher formal course report grades, a finding that is

consistent with research in this field (e.g., Barrick & Mount, 1991; Barrick et al., 2001; O'Keefe, 1998; Salgado, 1997; Tett et al., 1991). Accordingly, Hypothesis 3a was partially supported for BMQ candidates.

Overall, the pattern with which the TSD versions, NEO-FFI, and HEXACO predicted job performance criteria were similar. The only exceptions to this similarity in prediction of criterion variables were that the Neuroticism factors of the 75-item TSD and NEO-FFI were significant predictors of *Course Report Grade* for BMQ candidates, the Conscientiousness factor of the NEO-FFI failed to predict *General Job Task Proficiency* for BMQ candidates, and the Extraversion factor of the 50-item TSD significantly predicted *Leadership – Course Grade* for IAP candidates. Additionally, the Honesty-Humility factor of the HEXACO emerged as a valid predictor of counterproductive workplace behaviours and was the only factor to predict interpersonal deviance in IAP candidates.

The final hypothesis was that the 75-item TSD would demonstrate the strongest predictive validity of overall performance, contextual performance, and counterproductive workplace behaviours of the three TSD versions. The fact that the 75-item TSD version was the only TSD version where Neuroticism predicted *Course Report Grade* for BMQ candidates provides partial support for Hypothesis 4. However, the pattern of prediction was similar among the TSD versions was similar and the ability of the 50-item TSD version to predict *Leadership – Course Grade* for IAP candidates suggests that further research should be conducted with both the 75- and 50-item TSD versions.

Limitations and Future Research

One of the limitations of this study was range restriction. Because all of the participants in this study were CF enrolees attending initial military training, those individuals who wanted to enrol but who were not selected were unable to be tested. Accordingly, the enrolee population is more homogeneous than the CF applicant population, a factor that could be reducing both correlations among variables of interest and adversely affecting the ability of the personality factors to predict job performance criteria. Moreover, as previously mentioned, job performance data was not always available for candidates who were re-coursed[12] or voluntarily withdrew from training, reducing the number of unsuccessful candidates available for the regression analyses. The lone exception to this trend was the Measure of Workplace Deviance which was administered as a part of the initial questionnaire. The impact of range restriction is potentially more pronounced for the IAP candidates due to the fact that the CF enrols far fewer officers than NCMs, and it selects these enrolees at national selection boards. Therefore, range restriction may limit the degree of significance when testing the predictive ability of personality. Accordingly, future research should examine the CF applicant population versus those who are already enrolled in order to address this issue.

The inclusion of the Measure of Workplace Deviance (a self-report criterion measure) in the initial questionnaire may have resulted in common method variance, a factor that could be inflating the correlation between predictor variables and the MWD

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[12] Candidates are re-coursed when they are unable to complete the specific course serial to which they have been assigned, yet are deemed to have the potential to pass. Reasons why a candidate may be re-coursed include injury (e.g., the candidate suffers an injury and must cease training until the injury has healed), learning difficulties (i.e., the candidate does not learn components of the course quickly enough but is given another opportunity to start the course at an earlier stage), fitness (i.e., candidate fails the fitness test and is given the opportunity to re-start the course).

criterion (Podsakoff & Organ, 1986). However, due to the presence of non-significant and near-zero correlations among some of the self-report measures, the likelihood that common method variance played an influential role in the observed relationships is diminished (Lindell & Whitney, 2001). Although supervisor ratings of personal discipline were obtained, other alternatives to self-report measures counterproductive workplace behaviours should be explored.

Another limitation of the current study is the relatively small IAP sample size. With fewer IAP candidates undergoing training at any one time than their BMQ counterparts, the sample of IAP candidates dropped below 100 for the regression analyses. A larger sample would have provided more power to detect significance than was available in this study. Accordingly, research should continue with IAP candidates in order increase the size of the sample, preferably with candidates who completed the personality questionnaire as a part of the application process.

Both French and English questionnaires and SRFs were used in this study. Some language differences occurred when predicting performance. However, these language differences should be viewed with caution at this time because SRFs for French BMQ candidates were not available at the time of analysis, and those French SRFs that were received for IAP candidates all came from one platoon. Accordingly, differences could be attributable to the rater as much as to language. Future research should incorporate the French BMQ SRF data to examine potential language differences with this criterion. The International Test Commission (ITC) has developed 22 guidelines for test adaptation organized into four categories: context, test development and adaptation, administration, and documentation/score interpretations (Hambleton, 2001; Van de Vijver & Hambleton,

1996). Ultimately, concerns have arisen that *literal* translation can often lead to item and

construct bias due to cultural differences and poor word choice. Moreover, the common

practice of back-translation is not a sufficient remedy for these potential biases.

Therefore, although the French measures used in this study were translated from English

by Government of Canada translators, the adaptation process may have been deficient.

Accordingly, these measures should be re-examined in accordance with the ITC

Guidelines prior to further use in order to ensure that the constructs and items have been

adequately adapted from the English version.

The SRFs utilized Behaviourally Anchored Rating Scales (BARS) in order to

provide assessors with specific, behavioural examples to help assess the candidates

accurately and consistently. Due to the busy schedule of the instructors and staggered

nature of the course serials, the provision of rater training was not possible. It is possible

that rater error (e.g., halo error) may have contributed to the lack of clear performance

factors for the BMQ. However, detailed instructions on the use and completion of the

SRFs were provided (Appendix F). Future research should provide training to supervisors

in order to better examine the issue of rater error and its influence on the dimensionality

of the SRFs.

Additionally, more research is necessary within the military context in order to

optimize the value that personality testing can add to the CF selection system.

Specifically, once the CF decides to adopt a specific self-report measure of personality,

this particular measure needs to be administered within the CF Recruiting System in

order to examine a population suitable for a predictive validity studies without the

limitation of restriction of range. Furthermore, norms need to be created for CF

applicants and these results should be examined to determine whether separate criteria are

required for different demographic groups. Once the predictive relationships have been

more accurately examined, a suitable means for interpreting the results will be able to be

determined (i.e., top-down selection, minimum cut off, "red flag", etc.) and policy

developed to incorporate this process into the selection system.

Other important areas of research that should be considered when implementing

self-report personality testing into the CF Selection System include the potential for

response distortion, or faking, as well as the impact that personality testing may have on

applicant perceptions of the selection process (e.g., fairness). With respect to response

distortion, some research suggests that faking is problematic (e.g., Schmit, Ryan,

Stierwalt, & Powell, 1995) whereas other research suggests faking has little adverse

impact on validity (e.g., Barrick & Mount, 1996; Hough, Eaton, & Dunnette, 1990; Ones

& Viswesvaran, 1998). Although Hough and Furnham (2003) concluded that the impact

of faking is relatively unaffected when used in employment settings, especially when

accompanied with warnings that adverse consequences for response distortion, the CF

may want to research this issue further within the context of the current selection system.

Applicant impressions are also an important and the CF will want to investigate

the potential that personality testing will not be seen as a negative component of the

selection process. Ultimately, the manner in which personality testing is integrated and

the methods used to provide feedback to applicants will require careful consideration in

order to ensure that the addition of a valid selection tool does not adversely impact the

ability to attract new applicants.

Implications for the CF

Despite the limitations of this study, the results have demonstrated that certain personality factors can predict relevant job performance criteria even after controlling for demographic variables and cognitive ability. Specifically, the ability of Conscientiousness to predict BMQ job performance criteria and the ability of Extraversion to predict leadership behaviours provides the CF with measures that tap directly into the core performance dimensions of both the BMQ and IAP courses. Moreover, the ability of Conscientiousness to predict counterproductive behaviour for both IAP and BMQ candidates affords the CF a selection tool that can help address some of the shortcomings identified via the Somalia Inquiry. Finally, cognitive ability, which has been the cornerstone of the CF selection system, failed to predict all job performance criteria with the exception of course grade. Accordingly, personality testing appears to be a promising addition to the CF Selection System.

With respect to the question of which personality measure to recommend for further consideration in the CF Selection System, both the NEO-FFI and HEXACO generally demonstrated a pattern of prediction that was similar to that of the TSD versions, and the factors of all measures had good internal consistency. However, due to the fact that the TSD is a proprietary instrument of the military and was developed for use within military selection systems, it is recommended that the TSD be the measure implemented by the CF. The one exception to this is the Honesty-Humility factor of the HEXACO. This additional factor emerged as a valid predictor of CWB and it was the only factor to predict interpersonal deviance in IAP candidates. Accordingly, further examination of the Honesty-Humility construct may be warranted.

With regard to which TSD version to recommend, both the 75-, and 50-item versions demonstrated some unique predictive ability (Neuroticism as a predictor of BMQ course grade, and Extraversion predicting IAP leadership grade, respectively). In terms of model fit, the 50-item TSD version fit the data the best but had slightly lower internal consistency. Although a clear choice between the 75-, and 50-item versions did not emerge, these results indicate that further pursuit of the 60-item TSD is not warranted. Accordingly, it is recommended that the CF administer a revised TSD-Experimental version that contains only those items of the 75-, and 50-item versions when conducting subsequent research with the CF applicant population.

Conclusion

Personality measures have demonstrated the ability to predict relevant job performance criteria, even after controlling for demographic variables and cognitive ability. Accordingly, the inclusion of a self-report personality inventory in the CF Selection System is recommended in order to improve the ability of the CF to enrol and promote the highest quality candidates. This study extended past research by including three versions of the TSD, along with another well-known five-factor measure of personality (NEO-FFI) and a new measure of a six-factor model (HEXACO). Moreover, general job task proficiency, contextual performance, and counterproductive workplace behaviours were included to examine the relationships among the factors of personality and specific job-related criteria. Conscientiousness was shown to be an important predictor of BMQ performance and counterproductive workplace behaviours, and Extraversion predicted leadership in officer candidates. Although the overall factor structure of the HEXACO was not generally supported, Honesty-Humility, a factor that is

not measured by the other scales, was shown to be important. Therefore, future research

must build on the framework and findings of this research in order to utilize the benefits

of the personality-performance relationship in personnel selection settings.

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Appendix B

Standardized Factor Loadings for the Confirmatory Factor Model of the 50-item TSD

Item	Factor				
	N	E	O	A	C
Tsd_st1	.59				
Tsd_st8	.69				
Tsd_st15	.75				
Tsd_st18	.75				
Tsd_st22	.64				
Tsd_st28	.69				
Tsd_st31	.66				
Tsd_st34	.68				
Tsd_st46	.65				
Tsd_st53	.65				
Tsd_a2R		.60			
Tsd_a7		.57			
Tsd_a12R		.63			
Tsd_a15R		.63			
Tsd_a18R		.60			
Tsd_a21R		.72			
Tsd_a24R		.68			
Tsd_a27		.61			
Tsd_s41R		.78			
Tsd_s45		.66			
Tsd_a4			.64		
Tsd_s3			.72		
Tsd_s7			.43		
Tsd_s17			.67		
Tsd_s21			.67		
Tsd_s24			.73		
Tsd_s42			.75		
Tsd_s47			.81		
Tsd_s51			.73		
Tsd_s54R			.63		
Tsd_a16				.65	
Tsd_a22				.45	
Tsd_a25				.66	
Tsd_a30				.67	
Tsd_s5				.69	
Tsd_s12				.76	
Tsd_s19				.77	
Tsd_s26				.55	
Tsd_s38				.80	
Tsd_s44				.69	
Tsd_a3R					.51
Tsd_a6					.58
Tsd_a9R					.75
Tsd_a11					.58
Tsd_a14					.76
Tsd_a23					.57
Tsd_a29					.85
Tsd_a31					.77
Tsd_s13					.81
Tsd_s27					.69

Note. N – Neuroticism, E – Extraversion, O – Openness, A – Agreeableness, C – Conscientiousness: a = TSD adjective: s = TSD statement; R = reverse scored item.

Appendix C

Standardized Factor Loadings for the Confirmatory Factor Model of the 60-item TSD

Item	Factor				
	N	E	O	A	C
Tsd_a1	.63				
Tsd_st1	.57				
Tsd_st8	.66				
Tsd_s11	.69				
Tsd_st15	.71				
Tsd_st18	.76				
Tsd_st22	.60				
Tsd_st28	.70				
Tsd_st31	.72				
Tsd_st34	.72				
Tsd_st40	.77				
Tsd_st49	.74				
Tsd_a2R		.62			
Tsd_a7		.61			
Tsd_a18R		.56			
Tsd_a21R		.73			
Tsd_a27		.69			
Tsd_s9		.53			
Tsd_a23R		.59			
Tsd_s29R		.47			
Tsd_s35		.53			
Tsd_s41R		.72			
Tsd_s45		.70			
Tsd_s50R		.64			
Tsd_a4			.64		
Tsd_s3			.70		
Tsd_s7			.43		
Tsd_s14			.50		
Tsd_s17			.66		
Tsd_s21			.69		
Tsd_s24			.73		
Tsd_s30			.62		
Tsd_s42			.75		
Tsd_s47			.79		
Tsd_s51			.72		
Tsd_s54R			.64		
Tsd_a10				.57	
Tsd_a16				.60	
Tsd_a19				.52	
Tsd_a22				.43	
Tsd_a25				.73	
Tsd_a28				.53	
Tsd_a30				.66	
Tsd_s5				.59	
Tsd_s32				.70	
Tsd_s38				.73	
Tsd_s44				.76	
Tsd_s48				.64	

| Item | Factor | | | | |
	N	E	O	A	C
Tsd_a6					.60
Tsd_a11					.61
Tsd_a14					.78
Tsd_a17					.39
Tsd_a29					.82
Tsd_a31					.75
Tsd_s6					.50
Tsd_s13					.77
Tsd_s20					.59
Tsd_s27					.69
Tsd_s33					.61
Tsd_s39					.43

Note. N – Neuroticism, E – Extraversion, O – Openness, A – Agreeableness, C – Conscientiousness; a = TSD adjective; s = TSD statement; R = reverse scored item.

Appendix D

Standardized Factor Loadings for the Confirmatory Factor Model of the 75-item TSD

Item	Factor				
	N	E	O	A	C
Tsd_a1	.62				
Tsd_s1	.57				
Tsd_s4	.60				
Tsd_s8	.68				
Tsd_s11	.70				
Tsd_s15	.73				
Tsd_s18	.77				
Tsd_s22	.62				
Tsd_s25	.71				
Tsd_s31	.71				
Tsd_st37	.75				
Tsd_st40	.77				
Tsd_s43	.63				
Tsd_s46	.65				
Tsd_s49	.73				
Tsd_a2R		.61			
Tsd_a7		.63			
Tsd_s16R		.58			
Tsd_a18R		.57			
Tsd_a21R		.72			
Tsd_a23R		.60			
Tsd_a27		.68			
Tsd_s2		.45			
Tsd_s9		.56			
Tsd_s23R		.60			
Tsd_s29R		.48			
Tsd_s35		.52			
Tsd_41R		.72			
Tsd_s45		.72			
Tsd_s50R		.65			
Tsd_a4			.66		
Tsd_a8			.45		
Tsd_s3			.70		
Tsd_s7			.46		
Tsd_s10			.56		
Tsd_s14			.50		
Tsd_s17			.64		
Tsd_s21			.66		
Tsd_s24			.74		
Tsd_s30			.64		
Tsd_s36			.51		
Tsd_s42			.76		
Tsd_s47			.78		
Tsd_s51			.72		
Tsd_s54R			.66		
Tsd_a5				.55	
Tsd_a10				.56	
Tsd_a13				.64	
Tsd_a16				.60	
Tsd_a19				.54	
Tsd_a22				.46	
Tsd_a25				.72	
Tsd_a28				.54	
Tsd_a30				.64	
Tsd_s5				.60	
Tsd_s32				.71	
Tsd_s38				.71	
Tsd_s44				.76	
Tsd_s48				.65	
Tsd_s52				.57	

Item	Factor				
	N	E	O	A	C
Tsd_a6					.63
Tsd_a9R					.75
Tsd_a11					.63
Tsd_a14					.79
Tsd_a17					.38
Tsd_a20					.53
Tsd_a23					.58
Tsd_a26					.56
Tsd_a29					.84
Tsd_a31					.74
Tsd_s6					.48
Tsd_s13					.76
Tsd_s20					.58
Tsd_s27					.67
Tsd_s33					.60

Note. N – Neuroticism, E – Extraversion, O – Openness, A – Agreeableness, C – Conscientiousness; a = TSD adjective; s = TSD statement; R = reverse scored item.

Appendix E

Standardized Factor Loadings for the Confirmatory Factor Model of the HEXACO

Item	Factor H	E	X	A	C	O
H_Sincerity	.51					
H_Fairness	.71					
H_Greed Avoidance	.56					
H_Modesty	.46					
E_Fearfulness		.58				
E_Anxiety		.63				
E_Dependence		.51				
E_Sentimentality		.59				
X_Expressiveness			.45			
X_Social Boldness			.66			
X_Sociability			.62			
X_Liveliness			.75			
A_Forgiveness				.63		
A_Gentleness				.60		
A_Flexibility				.51		
A_Patience				.71		
C_Organization					.69	
C_Diligence					.78	
C_Perfectionism					.58	
C_Prudence					.60	
O_Aesthetic Appreciation						.70
O_Inquisitiveness						.56
O_Creativity						.71
O_Unconventionality						.70

Note. H – Honesty-Humility, E – Emotionality, X – Extraversion, A – Agreeableness, C = Conscientiousness, O – Openness.

Appendix F

Standardized Factor Loadings for the Confirmatory Factor Model of the NEO-FFI

	Factor				
Item	N	E	O	A	C
NEO_1R	.38				
NEO_6	.61				
NEO_11	.71				
NEO_16R	.47				
NEO_21	.68				
NEO_26	.74				
NEO_31R	.54				
NEO_36	.51				
NEO_41	.71				
NEO_46R	.48				
NEO_51	.60				
NEO_56	.60				
NEO_2		.51			
NEO_7		.44			
NEO_12R		.36			
NEO_17		.55			
NEO_22		.45			
NEO_27R		.43			
NEO_32		.60			
NEO_37		.70			
NEO_42R		.54			
NEO_47		.48			
NEO_52		.63			
NEO_57R		.30			
NEO_3R			.21		
NEO_8R			.07		
NEO_13			.67		
NEO_18R			.27		
NEO_23R			.53		
NEO_28			.42		
NEO_33R			.29		
NEO_38R			.00		
NEO_43			.65		
NEO_48R			.62		
NEO_53			.61		
NEO_58			.71		
NEO_4				.46	
NEO_9R				.57	
NEO_14R				.54	
NEO_19				.30	
NEO_24R				.55	
NEO_29R				.39	
NEO_34				.43	
NEO_39R				.51	
NEO_44R				.38	
NEO_49				.44	
NEO_54R				.13	
NEO_59R				.53	

Item	Factor				
	N	E	O	A	C
NEO_5					.62
NEO_10					.57
NEO_15R					.48
NEO_20					.55
NEO_25					.66
NEO_30R					.56
NEO_35					.66
NEO_40					.60
NEO_45R					.53
NEO_50					.68
NEO_55R					.64
NEO_60					.63

Note. N – Neuroticism, E – Extraversion, O – Openness, A – Agreeableness, C – Conscientiousness; R = reverse scored item.

Appendix G

Goodness-of-Fit Indices for the TSD, NEO-FFI, and HEXACO Separated by Language

Model	English (N = 427)			French (N = 185)		
	SRMR[a]	RMSEA	CFI	SRMR[a]	RMSEA	CFI
1. TSD (75-item)	.09	.05	.77	.09	.06	.72
2. TSD (60-item)	.09	.06	.79	.09	.06	.80
3. TSD (50-item)	.09	.06	.83	.10	.07	.78
4. NEO-FFI	.08	.05	.74	.09	.06	.65
5. HEXACO	.09	.08	.73	.10	.08	.68

Note. [a] Robust statistics were not calculated for the SRMR. SRMR - Standardized Root Mean Square residual, RMSEA - Root Mean Square Error of Approximation, CFI - Comparative Fit Index.

Appendix F   Supervisor Rating Form Instructions

PROTECTING THE CONFIDENTIALITY OF YOUR RESPONSES

Director of Human Resource Research and Evaluation (DHRRE) will protect the confidentiality of your responses to the extent permissible under Canadian Law. You should be aware that under the Access to Information Act, Canadian citizens are entitled to obtain copies of research reports and research data (including the database pertaining to this project) held in Federal government files. Similarly, under the Privacy Act, Canadian citizens are entitled to copies of all information concerning them that is held in Federal government files including research databases. Prior to releasing requested information, the Directorate of Access to Information and Privacy (DAIP) screens the data to ensure that individual identities are not disclosed.

SUPERVISOR RATING FORM - INITIAL ASSESSMENT PHASE (IAP) COURSE CANDIDATES

You are now asked to evaluate your course candidates on the Assessment Factors (AFs) below. *Please complete assessments on all candidates to the best of your ability, regardless of their final disposition (e.g. pass, fail, etc.).* Each AF relates to a dimension of performance deemed important for initial military training and employment. Each AF is to be evaluated on a five (5) point scale where:

> 1 = poor performance
> 2 = below average performance
> 3 = average performance
> 4 = above average performance
> 5 = superior performance

To guide your assessment of the candidates on each AF, three of the scale points, "1", "3", and "5", contain behavioural examples (anchors) of performance. You are asked to read the definition of each AF, consider the candidate's performance, review the anchors, and determine which rating to assign. If the candidate's behaviour is consistent with one of the anchors, assign that rating to the AF. If the candidate's behaviour does not fit one of the three anchors, determine between which two anchors the candidate's performance would fall and assign that rating.

For example, if the candidate's performance was consistent with the anchor for a "3", then assign a rating of "3" to that AF. If the candidate's performance was better than that described by the "3" but not as good as that described by the "5", then a rating of "4" should be given.

Once you have read the definition of the AF, examined the anchors, and determined the most appropriate rating, enter the rating in the blank space located to the immediate left of each AF.

Additionally, you are asked to transfer your responses to the General Purpose Answer Sheet (bubble sheet) provided as follows: In the "COURSE" section, enter "IAP" under the A, B, and C columns, and the last 3 digits of YOUR Service Number under the F,G, and H columns; in the "IDENTIFICATION NUMBER" section, enter the candidate's Service Number; and in the "NAME" section, enter the candidate's surname; filling in the bubbles as appropriate for each section. When completing the bubble sheet, please note that please note that items "1" through "17" should be completed.

Example:

COURSE							
A	B	C	D	E	F	G	H
1	A	P				1	2	3

IDENTIFICATION NUMBER								
K	L	M	N	O	P	Q	R	S
A	1	2	3	4	5	6	7	8

Name (Last, First, M.I.)													
S	U	R	N	A	M	E							

Le Directeur – Recherche et évaluation en ressources humaines (DRERH) protégera la confidentialité de vos réponses dans la mesure permise par la législation canadienne. Vous devez cependant savoir qu'en vertu de la *Loi sur l'accès à l'information*, les citoyens canadiens ont le droit d'obtenir une copie des rapports et des données de recherche (y compris de la base de données du projet) versés aux dossiers de l'administration fédérale. De plus, en vertu de la *Loi sur la protection des renseignements personnels*, ils ont le droit de recevoir une copie de toute l'information à leur sujet détenue par l'administration fédérale dans ses dossiers, dont les bases de données de recherche. Avant de divulguer les données demandées, le Directeur – Accès à l'information et protection des renseignements personnels (DAIPRP) les examine pour veiller à ne pas divulguer votre identité.

FORMULAIRE D'ÉVALUATION DU SUPERVISEUR –
PÉRIODE D'ÉVALUATION INITIALE (PEI) – CANDIDATS DU COURS

Nous vous demandons d'évaluer le rendement des candidats de votre cours à partir des facteurs d'évaluation (FE) ci-dessous. *Veuillez remplir de votre mieux le formulaire d'évaluation de chacun des candidats, sans tenir compte de leur classement final (c'est-à-dire, réussite, échec, etc.).* Chaque FE se rapporte à un aspect du rendement jugé important pour la période initiale de l'instruction militaire et pour le poste. Les FE sont cotés sur une échelle de un (1) à cinq (5), comme suit:

1 = rendement faible
2 = rendement au-dessous de la moyenne
3 = rendement moyen
4 = rendement au-dessus de la moyenne
5 = rendement supérieur à la moyenne

Pour vous aider à coter chacun des FE, nous avons inclus des exemples de comportements (critères) équivalant aux cotes « 1 », « 3 » et « 5 » de l'échelle. Nous vous demandons de lire la définition de chacun des FE, de réfléchir au rendement du candidat évalué, d'examiner le texte des critères et de déterminer la cote qui correspond à votre évaluation. Lorsque le comportement du candidat correspond à la description de l'un des critères, assignez la cote qui s'y applique. Sinon, déterminez où se situe le candidat par rapport à deux critères qui se suivent puis assignez la cote qui convient.

Par exemple, si le rendement du candidat correspond au critère dont la cote est « 3 », assignez la cote « 3 » à ce FE; par contre, si son rendement est meilleur que celui décrit sous la cote « 3 », mais qu'il n'est pas aussi élevé que celui décrit sous la cote « 5 », il faut assigner la cote « 4 ».

Une fois que vous avez lu la définition du FE, examiné les critères et déterminé la cote qui convient le mieux, indiquez votre cote dans l'espace vide situé immédiatement à gauche de

chacun des FE. **De plus**, nous vous demandons de reporter vos réponses comme suit sur la feuille de réponses générale (avec les petits cercles) qui vous est fournie : dans la section « COURSE », inscrivez PEI dans les colonnes A, B et C, ainsi que les trois derniers chiffres de VOTRE numéro matricule dans les colonnes F, G et H; dans la section « IDENTIFICATION NUMBER », inscrivez le numéro matricule du candidat; dans la section « NAME », inscrivez le nom de famille du candidat puis noircissez les cercles correspondant à vos réponses, et ce à chacune des sections. Finalement, n'oubliez pas que vous devez noter les éléments « 1 » à « 17 » sur cette feuille de réponses.

Exemple :

COURSE							
A	B	C	D	E	F	G	H
P	E	I			1	2	3

IDENTIFICATION NUMBER								
K	L	M	N	O	P	Q	R	S
A	1	2	3	4	5	6	7	8

Name (Last, First, M.I.)														
F	A	M	I	L	L	E								

Saint Mary's University

Certificate of Ethical Acceptability
of
Research Involving Human Subjects

This is to certify that the Research Ethics Board has examined the research proposal or other type of study submitted by:

Principal Investigator: BOYES, Fraser

Name of Research Project: Personality as a predictor of military performance and counterproductive behaviour

REB File Number: 04-155

and concludes that in all respects the proposed project meets appropriate standards of ethical acceptability and is in accordance with the Tri-Council Policy Statement on the Conduct of Research Involving Humans.

> Please note that for "ongoing research", approval is only effective for one year from the date approved. If your research project takes longer than one year to complete, submit Form #3 (Annual Report) to the REB at the end of the year and request an extension. You are also required to submit Form #5 (Completion of Research) upon completion of your research.

Date: 15 December 2004

Signature of REB Chair: Dr. John Young