

Canadian
Forces
College

Collège
des
Forces
Canadiennes



CANADIAN FORCES: A LACK OF PERSONALITY

Major J.D. Hawthorne

JCSP 36

Master of Defence Studies

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2010.

PCEMI 36

Maîtrise en études de la défense

Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2010.

CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES

JCSP 36 / PCEMI 36

MDS RESEARCH PROJECT / PROJET DE RECHERCHE MED

CANADIAN FORCES: A LACK OF PERSONALITY

By/par Maj/maj JD Hawthorne

This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.

Word Count: 15031

La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.

Compte de mots : 15031

Abstract

Personnel selection is an important process for all organizations, and particularly for the Canadian Forces. The focus of the personnel selection process is to identify individuals with the skills, ability and potential to succeed in the organization. The majority of selection processes involve a predictive assessment to determine future performance at some level within the organization. However, current predictive assessments within the personnel selection segment of the Canadian Forces fail to provide a quantifiable long-term prediction of future performance. This paper analyzes the predictive validity of personality testing to provide a long-term prediction of future performance in the context of the Canadian Forces. The analysis incorporates a study of personality theories and the history and evolution of personality testing from the beginning of the twentieth century onwards. Building upon the personality theories and personality testing, taxonomy of the five factors of personality is considered. A detailed analysis of the current predictive methods for recruiting and selection within the Canadian Forces is conducted. A number of deficiencies of the Canadian Forces' recruiting and selection process are identified. The predictive qualities of personality testing are examined. The effect of incorporating personality testing into recruiting and selection for the Canadian Forces is analyzed as a method in alleviating the current deficiencies of the Canadian Forces' personnel

selection methods. To conclude, recommendations, including the immediately implementation of personality testing in the recruiting and selection process for the Canadian Forces, are postulated.

Table of Contents

Introduction.....	1
History and Evolution of Personality Testing.....	4
The Five Factors of Personality	31
The Lack of Personality in the Canadian Forces	43
Personality Predicting Performance.....	51
Factors and Facets of the Canadian Forces.....	65
Conclusion	75

List of Tables

Table 1: History of Personality Dimensions

33

Chapter 1 – Introduction

“Personnel selection is a process culminating in a decision to hire one or more applicants for employment and not to hire the others.”¹

Personnel selection is an important process for all organizations, and particularly for the Canadian Forces. Members of the Canadian Forces are recruited and selected to a profession of arms. The rigors of military life, from spending months away from family to the ever-changing operation conditions to the ultimate sacrifice, requires...a different outlook on life. How does one quantify a different outlook on life? Is a different outlook on life a mental state? Or is it unique personality? If one is unable to determine the precise criterion for the profession of arms, how are members of the Canadian Forces recruited and selected for employment while others are not?

The majority of selection processes involve a predictive assessment to determine future performance at some level within the organization.² The predictive assessment can range from cognitive testing to interviewing to a background search.³ Regardless of the method of achieving predictions of future performance the basis and fundamentals of

¹ Robert M. Guion and Wade M. Gibson, "Personnel Selection and Placement," *Annual Review of Psychology* 39 (1988), 349-374, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1989-13793-001&site=ehost-live>.

² Chris Piotrowski and Terry Armstrong, "Current Recruitment and Selection Practices: A National Survey of Fortune 1000 Firms," *North American Journal of Psychology* 8, no. 3 (12, 2006), 489-496, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2006-22967-009&site=ehost-live>.

³ Robert M. Guion, "Changing Views for Personnel Selection Research," *Personnel Psychology* 40, no. 2 (1987), 199-213, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1987-33033-001&site=ehost-live>.

the assessment must be validated and sound.⁴ Failure to ensure the validity of the assessment tool will fundamentally alter the desired effect to the point of negating the prediction of future performance.⁵

Current predictive assessments within the personnel selection segment of the Canadian Forces fail to provide a quantifiable long-term prediction of future performance.⁶ The Canadian Forces Aptitude Test conducts an assessment of an applicant's general mental ability; however, the predictive capability is limited to the applicant's success of completing initial military occupation training.⁷ The current predictive assessments employed by the Canadian Forces during the recruiting and selection process focus on the short-term performance of the recruit. A long-term predictive assessment of performance would provide more significance to the Canadian Forces, particularly with respect to advancement and retention. One method to consider for long-term prediction of future performance is personality testing.⁸

⁴ John M. Digman, "Five Robust Trait Dimensions: Development, Stability, and Utility," *Journal of Personality* 57, no. 2 (06, 1989), 195-214, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1990-00980-001&site=ehost-live>.

⁵ Janice H. Laurence and Peter F. Ramsberger, *Low-Aptitude Men in the Military: Who Profits, Who Pays?* (New York: Praeger Publishers, 1991).

⁶ Marcel Girard, "Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria" (Masters of Arts, University of Guelph), .

⁷ F. Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms* (Ottawa: Director Human Resources Research and Evaluation,[2004]).

⁸ LEAETTA M. HOUGH and FREDERICK L. OSWALD, "Personality Testing and Industrial–Organizational Psychology: Reflections, Progress, and Prospects," *Industrial & Organizational Psychology* 1, no. 3 (09, 2008), 272-290, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=34275786&site=ehost-live>.

This paper will analyze the predictive validity of personality testing to provide a long-term prediction of future performance in the context of the Canadian Forces. The analysis will incorporate a study of personality theories and the history and evolution of personality testing in Chapter 2. Chapter 3 will focus on the accepted five factors of personality. A detailed analysis of the current predictive methods for recruiting and selection will be conducted in Chapter 4. Chapter 5 will detail the predictive qualities of personality testing. The effect of incorporating personality testing into recruiting and selection for the Canadian Forces will be analyzed in Chapter 6. The paper will conclude at Chapter 7 with a recommendation to immediately implement personality testing in the recruiting and selection process for the Canadian Forces.

Chapter 2 – History and Evolution of Personality Testing

To understand current personality testing philosophies, one must have a basic comprehension of personality theories and an appreciable understanding of the history and evolution of personality testing through to modern times.

This chapter will examine the basis of personality theory and the history and evolution of personality testing. The beginning of this chapter will focus on the basics of personality theories. First, biological theory as proposed by Hans Eysenck is overviewed with emphasis on the inheritability of personality traits and facets specifically among twins. Second, psychoanalytic theory as hypothesised by Sigmund Freud is considered. Freud's concentration on the forbidden unconscious is explored. Third, Gordon Allport's additions to trait theory are examined and the significance of personality traits is fully developed. Fourth, learning theory and behaviourism as proposed by John Watson is overviewed. Watson's focus on training people's behaviours is considered. Fifth, Abraham Maslow's Hierarchy of Needs approach to humanistic theory is examined. To complete the first half of the chapter, cognitive theory as constructed by George Kelly is overviewed.

The latter portion of this chapter will delve into the history and evolution of personality testing. First, the Woodworth Personal Data Sheet, proposed by Robert Woodworth is examined as the first assessment of personality. Second, the Humm-Wadsworth Temperament Scale conceived by Doncaster Humm and Guy Wadsworth Jr.

is discussed and recognized as one of the first multi-dimensional personality tests. Third, the Sixteen Personality Factor Questionnaire developed by Raymond Cattell is overviewed with emphasis on its contribution to current factors of personality. Fourth, the demise of personality testing through the 1960s is discussed and the effects of Robert Guion and Richard Gottier are considered. Fifth, the revival of personality testing by Murray Barrick and Michael Mount, and John Digman, from the work of Tupes and Christal for the US Air Force in the late 1950s is examined.

Personality Theory

For the majority of modern times, scholars accepted that an individual's personality, specifically one's behaviours and traits, were biologically predisposed.⁹ Children commonly have the same traits and behaviours as their parents. Successive generations of families generally maintain root personalities throughout the family lineage. Even on a macro scale, the traits and behaviours of human beings have been roughly consistent since the beginning of recorded time. However, as the beginning of the twentieth century approached, academics began to ponder other means and avenues to explain traits, behaviours and ultimately personalities.

To what does one attribute the similarities of traits and behaviours between parents and offspring, predominate personalities through successive generations of

⁹ Lindon Eaves and Hans Eysenck, "The Nature of Extraversion: A Genetical Analysis," *Journal of Personality and Social Psychology* 32, no. 1 (07, 1975), 102-112, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1975-27622-001&site=ehost-live>.

families, and the general traits and behaviours of humans? To the vast majority of scholars up to the end of the nineteenth century, an individual's personality was seen as a result of biology, specifically the inheritability of personal characteristics, also known as an individual's traits and behaviours.¹⁰ Hans Eysenck was a strong proponent of biology theory.

Throughout the decades of his research and scientific study, Hans Eysenck sought to prove the genetic component of personalities. The majority of his research and studies focused on the personality similarities and differences of twins, specifically the traits of extraversion and neuroticism.¹¹ However, just as strongly as Eysenck purported the link between traits and genealogy, he also sought to explain the effect of environmental influences on the inherited personality, specifically how the environment altered traits and behaviours within a family group. From his research, Eysenck's postulated, "[b]etween 30% and 40% of the variation in components of extraversion may be due to environmental factors that cannot be attributed to the inconsistency of the test."¹² However, he further suggests, "[a]ll of the detectable environment variation is specific to individuals rather than common to families."¹³ In other words, in order for an individual to have the ability to demonstrate a strong trait or behaviour, the trait must be resident within the genetic background of the family and will be expressed differently depending on the individual's environment. Hans Eysenck sought to fully understand and expand

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² *Ibid.*, 111

¹³ *Ibid.*, 111

the biological explanation for traits and behaviours, while interpreting and explaining the role of the environment on the individual's persona.

As Hans Eysenck's research delved into the explanation of genealogy and personality, Sigmund Freud explored the unconscious mind to explain one's behaviours using psychoanalysis. "Freud was the creator of the full-blown theory of psychoanalysis."¹⁴ Through the process of exploring the unconscious, one could ascertain the fundamentals prevalent in an individual's behaviour. Freud's theories revealed the unconscious as a placeholder of repressed and forbidden interests and intentions, primarily of a sexual or aggressive nature. Only when the defensive measures of the mind failed to guard against the repressed and forbidden desires stowed in the unconscious mind, did the true traits and behaviour of an individual surface.¹⁵ His psychoanalytic theory postulated the inner, deeply-hidden core personality of an individual remains within the unconscious, until a pivotal event or incident forces the repressed or forbidden desire or interest to the forefront of the conscious mind. Once raised to the conscious mind, "...these instinctual desires are so imperious and peremptory that they recklessly seek immediate gratification, independently of the constraints of external reality."¹⁶ Thus, being outwardly expressed as a trait or behaviour of the individual's external personality.

¹⁴ Adolf Grünbaum, "Is Sigmund Freud's Psychoanalytic Edifice Relevant to the 21st Century?" *Psychoanalytic Psychology* 23, no. 2 (Spr, 2006), 260, <http://search.ebscohost.com/login.aspx?direct=true&db=pdh&AN=pap-23-2-257&site=ehost-live>.

¹⁵ *Ibid.*

¹⁶ *Ibid.*, 261

Throughout Freud's psychoanalytic research, he sought to fully understand the unconscious mind. Freud desired to quantify and explain the repressed instinctual desires and interests inherent to the human psyche, in conjunction with the mental processes and structures to thwart the advancement of the forbidden interests from the unconscious to the conscious.

From the discussion of Freud's "instinctual desires" and Eysenck's "inheritable traits and behaviours" and the effect of environment on both, one could reasonably argue whether a difference exists between the macro findings of the two. Both profess human traits and behaviours are predisposed, one via instinctual means the other through genealogy. Both concede the environment can affect the external expression of traits and behaviours, ultimately parlaying the personality of the individual. To truly understand an individual's personality one must determine the true core traits and behaviours of the individual. The trait theory as proposed by Gordon Allport purported to achieve such a measure of the true core personality of individuals.¹⁷

At the start of Gordon Allport's work, the term personality carried very little meaning in academia and the general public. As was prevalent during the early twentieth century an individual's character was the essence of the persona. Allport argued personality had an individual uniqueness pertaining to traits, whereas character was

¹⁷ Ian A. M. Nicholson, "Gordon Allport, Character, and the "Culture of Personality," 1897–1937," *History of Psychology* 1, no. 1 (02, 1998), 52-68, <http://search.ebscohost.com/login.aspx?direct=true&db=pdh&AN=hop-1-1-52&site=ehost-live>.

shaped by the moral, social and cultural considerations of the general population.¹⁸

“Instead of viewing the individual as a shell passively mirroring the environment, Allport argued that personality consisted of a powerful bundle of neurologically grounded qualities or “traits.””¹⁹ To truly study the uniqueness of the individual, one had to examine the core personality of the individual rather than the jeopardized character of the person consistently manipulated by myriad external moral, social and cultural exigencies.²⁰

The examination of the unique core personality of individuals represented a dramatic shift in the study of psychology, “from a *nomothetic*...to an *idiographic* one, which scientifically studies the individual through the construct of personality.”²¹ Such a striking shift in the concept of psychology required a new objective process to assess the traits of the individual, rather than the subjective clinical analysis of people. Allport began “[b]y developing measures of what he believed to be the component traits of personality.”²² Allport and H.S. Odbert commenced the arduous task of creating a succinct list of personality relevant words in the English language. Using a Webster’s *New International Dictionary*, Allport and Odbert defined a list consisting of nearly

¹⁸ *Ibid.*

¹⁹ *Ibid.*, 62

²⁰ *Ibid.*

²¹ Giovanni Pietro Lombardo and Renato Foschi, "The European Origins of 'Personality Psychology'," *European Psychologist* 7, no. 2 (06, 2002), 134, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2002-04162-005&site=ehost-live>.

²² Nicholson, *Gordon Allport, Character, and the "Culture of Personality," 1897–1937*, 58.

18,000 words pertaining to personality traits.²³ To further manage the magnitude and unwieldiness of the almost 18,000 terms, Allport and Odbert organized the terms into four separate categories denoting the words relevance to personal traits.²⁴ The first category reflected terms that "...generalized and personalized determining tendencies-consistent and stable modes of an individual's adjustment to his environment..."²⁵; whereas, the fourth category contained "...metaphorical and doubtful terms."²⁶ The 4,504 words in the first category of 'generalized and personalized determining tendencies' represented the beginning of trait recognition, the recognition of the science of personality and the essence of Allport's trait theory.²⁷

The advancement of Allport's trait theory stalled with the societal acceptance of the more objective field of behaviourism in psychology. The field of behaviourism was more concerned with the observable behaviours and reactions of people, rather than the possible thought processes and structures of the conscious and unconscious mind. Tangible and measureable results and observations were the essence of behaviourism.

Ivan Pavlov is credited with the initial approach to behaviourism. While conducting research to study digestive processes with dogs, he accidentally discovered that

²³ Oliver P. John, Alois Angleitner and Fritz Ostendorf, "The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research," *European Journal of Personality* 2, no. 3 (09, 1988), 171-203, <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=12062303&site=ehost-live>.

²⁴ Nicholson, *Gordon Allport, Character, and the "Culture of Personality," 1897-1937*, 52-68.

²⁵ Allport and Odbert in John, Angleitner and Ostendorf, *The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research*, 178.

²⁶ Allport and Odbert in *Ibid.*, 178

²⁷ *Ibid.*

the dogs could be trained to salivate with nothing more than the sound of a bell. The initial process to teach the dogs to salivate was accidental; however, the resulting observation altered the direction of psychology for many years. Building upon the research and work of Pavlov, John Watson applied and advertized the learning theory, and more importantly, behaviourism to the North American populous:

Possibly the easiest way to bring out the contrast between the old psychology and the new is to say that all schools of psychology except that of behaviorism claim that “*consciousness*” is the *subject matter of psychology*. Behaviorism, on the contrary, holds that the subject matter of human psychology is the *behavior or activities of the human being*. Behaviorism claims that “consciousness” is neither a definable nor a usable concept; that it is merely another word for the “soul” of more ancient times.²⁸

The advent of behaviourism captured the world of psychology. The behaviour of people could be altered. Tangible and measureable results became the necessity of academia and the general public. Watson postulated anyone could be trained to achieve some measure of success:

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants,

²⁸ John B. Watson, *Behaviorism* (New York: W.W. Norton & Company, 1970), 3.

tendencies, abilities, vocations, and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years.²⁹

People could be trained to complete any task and learn to avoid maladjusted behaviour. As such, entire institutions adapted policies and procedures to train people to achieve desired and measurable results. The mantra of anyone can achieve anything was born.

The field of psychology was focused on behaviourism for nearly half of the twentieth century. Much of Watson's and later B.F. Skinner's behaviourism theories captivated a society and culture seeking tangible answers to the human psyche and persona. However, the follow on of the Second World War and the advent of the American crisis in Vietnam left people seeking less tangible results, rather seeking an understanding of what influenced the human psyche and persona. Abraham Maslow's concepts on the individual's hierarchy of needs and one's self-actualization provided the answers many people sought.

Despondent with the theories proposed by Freud regarding psychoanalysis and Watson's behaviourism, Abraham Maslow centered his research and study on understanding the impetus of the human mind to strive to achieve.³⁰ Maslow's humanistic theory evolved around the concept of every individual has the impetus, or

²⁹ *Ibid.*, 82

³⁰ Robert J. Zalenski and Richard Raspa, "Maslow's Hierarchy of Needs: A Framework for Achieving Human Potential in Hospice," *Journal of Palliative Medicine* 9, no. 5 (10, 2006), 1120-1127, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2006-20130-011&site=ehost-live>.

motivation to achieve and improve. As such, Maslow believed “[a] theory of motivation must include the study of ultimate human needs and goals appropriate to humanity’s full range of being.”³¹ To fully understand the motivation, Maslow likened humans to basic organisms with specific needs to ensure ultimate survival. The organism’s quest for survival started with the very basic biological needs, primarily food and water.³² The organism’s motivation for the basic biological needs consumed the persona and psyche of the organism until the needs were met. The organism that lacked the motivation to seek out and establish basic biological needs ultimately failed to survive and could hamper the survival of the species.³³ The organisms with the motivation to search for and secure the basic biological needs survived. However, as soon as the biological needs were achieved, the organism was motivated to continue to seek further improvement of its holistic environment.

In order to explain the ongoing motivation for advancement, Maslow proposed the five tier Hierarchy of Needs with the most basic biological needs as the wide base tier and self-actualization at the pinnacle.³⁴ As each tier of the Hierarchy of Needs was satisfied, the organism was motivated to strive for and attain the next elevated tier. However, if the needs of a lower tier were no longer sustained, the organism was motivated solely to once again achieve the needs of the lower tier. Maslow’s humanistic theory involving the Hierarchy of Needs provided a simple and readily understandable

³¹ *Ibid.*, 1121

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

approach for academia and the general public to understand the motivation and subsequent quest and drive for achievement of the human organism.

The Hierarchy of Needs developed by Abraham Maslow answered much in terms of the needs and motivations of humans; however, it failed to provide a scientific approach with hard facts and figures. Maslow's Hierarchy of Needs was subjective, and fully accepted by a society and culture seeking subjective answers at the time; however, as time and science progressed the desire for objective facts, figures and observations returned to the forefront.³⁵ Ironically, George Kelly, one of Abraham Maslow's colleagues and fellow supporters of the humanistic movement became the voice of the movement towards a more cognitive approach to psychology.

The acceptance of the more subjective philosophy of Maslow's humanistic psychology waned as the general public and academia sought cold hard facts through documented observations resulting in concrete conclusions and solutions to the then current psychological questions. George Kelly purported that people did not describe themselves in relation to Maslow's Hierarchy of Needs, nor did they tend to use any contemporary psychology language.³⁶ "Each person seeks to communicate his distress in the terms that make sense to [that person], but not necessarily in terms that make sense to

³⁵ Joseph Germana, "Maslow's Puzzle: A Reconfiguration," *Humanistic Psychologist* 35, no. 1 (01, 2007), 67-72, <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=24361581&site=ehost-live>. *Ibid.*

³⁶ John G. Benjafield, "George Kelly: Cognitive Psychologist, Humanistic Psychologist, Or Something Else Entirely?" *History of Psychology* 11, no. 4 (11, 2008), 239-262, <http://search.ebscohost.com/login.aspx?direct=true&db=pdh&AN=hop-11-4-239&site=ehost-live>.

others.”³⁷ People relate their feelings, their experiences, and their understanding of the world in terms and language unique to them. As every human is unique and one’s interaction with the world is unique, Kelly asserted that every person is a scientist actively perusing a better understanding of one’s unique self and one’s unique interactions with the world.³⁸

The cognitive process George Kelly proposed every individual used to compare and contrast one’s unique interactions with the world centered on one’s personal constructs.³⁹ As a person experiences unique interactions with the surrounding environment, one’s mind quickly assimilates the vast amounts of sensory information and establishes a baseline for further analysis; a personal construct. Kelly asserted the personal construct was “...a way in which we regard two events as being alike but different from a third event.”⁴⁰ Using the personal construct to cognitively analyse one’s unique experiences, the individual quickly establishes the differences and similarities between myriad sensory information amassed during interactions with the environment. When comparing one item, two people with their unique personal constructs established from their individual unique experiences may categorically disagree. For example, one person may say the glass is half full, while the other may state the glass is half empty. Based on the unique personal construct of each individual, both are correct when compared with their unique experiences. The personal constructs, as proposed by Kelly

³⁷ Kelly in *Ibid.*, 240

³⁸ *Ibid.*

³⁹ *Ibid.*

⁴⁰ Kelly in *Ibid.*, 240

provided an objective method to explain the mind's subjective cognitive analysis of one's unique experiences and to determine why people react differently to the same or similar environmental factors.⁴¹

In summary, the beginning of this chapter focused on the basics of personality theories. First, biological theory as proposed by Hans Eysenck was overviewed with a focus on the inheritability of personality traits specifically among twins. Second, psychoanalytic theory as hypothesised by Sigmund Freud was considered and Freud's concentration on the forbidden unconscious was revealed. Third, Gordon Allport's additions to trait theory were examined and the significance of personality traits was fully developed. Fourth, learning theory and behaviourism as proposed by John Watson was overviewed. Watson's focus on training any child to behave in a certain manner was considered. Fifth, Abraham Maslow's Hierarchy of Needs approach to humanistic theory was examined. Last, cognitive theory as constructed by George Kelly was overviewed.

History and Evolution of Personality Testing

The school of psychology evolved to study and understand the thought processes and behavioural actions of people. Theorists, researchers and scientists sought to understand the psychological differences between people, with the majority of early research focussing on the portion of the population considered less desirable or maladjusted. Specifically, at the beginning of the twentieth century, "...psychologists

⁴¹ *Ibid.*

were concerned with improving the measurement of psychological phenomena and they were beginning to become concerned with developing scientific-based applications that would benefit society.”⁴² To meet the need for a measurement, the initial psychological approaches involved the assessment of intellectual ability, whereas later approaches focussed scientific-based applications to determine intellectual fitness.⁴³ As such, the development of approaches to assess intellectual fitness brought about the first objective personality testing to identify maladjusted American military recruits during the First World War.⁴⁴

The land battles of the First World War witnessed a new found madness on the battlefield. The advancements in munitions through the end of the nineteenth century and into the beginning of the twentieth century resulted in relentless bombardments, grotesque deaths and feelings of absolute helplessness on the battlefield. As soldiers encountered the devastation of the battlefield, many soldiers failed to be able to complete the simplest of tasks. Soldiers were experiencing traumatic symptoms now commonly associated with Post Traumatic Stress Disorder; however, during the First World War these soldiers were labelled as afflicted with “shell shock” and removed from the front lines, at best, or labelled as cowards and subsequently executed. The distressed mind of the affected soldier was unable to cope with the realities of war, and science and medicine had not been able to accurately determine the just cause of the perceived

⁴² Robert E. Gibby and Michael J. Zickar, "A History of the Early Days of Personality Testing in American Industry: An Obsession with Adjustment," *History of Psychology* 11, no. 3 (08, 2008), 165, <http://search.ebscohost.com/login.aspx?direct=true&db=pdh&AN=hop-11-3-164&site=ehost-live>.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

ailment. Shell shocked soldiers were seen as maladjusted, hence only emotionally stable, adjusted men were to be recruited into the United States Army.⁴⁵

To achieve a measure of the emotional stability of recruits for the U.S Army, Robert Woodworth developed the Psychoneurotic Tendencies scale.⁴⁶ Using information gathered from case studies of patients with neurotic symptoms, and from interviews with psychologists and psychiatrists treating patients with neurotic symptoms, Woodworth developed a set of neurotic symptoms. The set of neurotic symptoms established a baseline test that was administered to a group of emotionally stable individuals to determine and eliminate positively correlated symptoms displayed by both the neurotic and emotionally stable data groups. The revised test was administered to a grouped of neurotic patients, in addition to 1000 U.S. Army recruits as a verification analysis before the test was administered on a trial basis for recruiting purposes. Applicants scoring above a threshold number of neurotic tendencies received additional psychiatric screening to verify the emotional stability of the possible recruit. The research, design and implementation of the test exceeded the timeframe of the First World War; however, the fundamental nature of the first one-dimensional personality test was established.⁴⁷

Following the First World War the focus on industrial expansion in the United States and the impetus of industrial-organizational psychology fuelled the need for a

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

method to predict the future performance of employees and applicants. To meet the demand, Woodworth modified the scale of the Psychoneurotic Tendencies test for an industrial application and renamed the test the Woodworth Personal Data Sheet.⁴⁸ Having been originally designed and evaluated to identify U.S. Army recruit applicants susceptible to Post Traumatic Stress Disorder, the Woodworth Personal Data Sheet focused on one dimension of the personality aspect, that of neuroticism or emotional stability of the respondent.⁴⁹ The application of the Woodworth Personal Data Sheet in the commercial industrial realm provided favourable results for managers to identify and remove employees unlikely to perform due to maladjustment; however, the unfortunate focus on the maladjustment of personnel polarized personality testing for most of the first half of the twentieth century in concert with the theories and research of Eysenck, Freud, Allport and many other leading psychologists.

The maladjusted employee was the weakest link in the performance of the commercial industrial complex. The general consensus was that "...maladjusted workers could cause problems by lowering work morale, fomenting workplace violence, and agitating for unions."⁵⁰ Using a tool, such as the Woodworth Personal Data Sheet to quickly and easily identify potential maladjusted employees became the trend in the process of personnel selection. To capitalize upon the demand to identify the maladjusted applicant or employee, the Woodworth Personal Data Sheet was quickly

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ *Ibid.*, 167

accompanied by several imitator one-dimension personality tests to measure other traits. However, it was not until 1931 that a multidimensional personality test incorporating components of one-dimensional personality tests was created to expand beyond the search only for maladjustment.⁵¹

The creation of multidimensional personality testing coincided with the commercialization and mass marketing of personality testing to industry. The Humm-Wadsworth Temperament Scale, perhaps the most successful and lucrative multidimensional personality test, was the first multidimensional personality test developed by individuals in the field of American industry and psychology.⁵² Doncaster Humm, a psychologist with an in depth understanding of maladjustment and Guy Wadsworth, Jr. an industrial executive teamed to create the Humm-Wadsworth Temperament Scale.⁵³ Much of the success of the Humm-Wadsworth Temperament Scale has been attributed to the marketing capabilities of Humm and Wadsworth.⁵⁴ The key to the marketability of the Humm-Wadsworth Temperament Scale was the degree of credibility Guy Wadsworth, Jr. brought to the test. “Wadsworth gave the test credibility among personnel managers in that a successful businessman lent his name and efforts to a psychological test that might otherwise be viewed suspiciously by managers reluctant to embrace psychological testing.”⁵⁵ Doncaster Humm, in addition to being the

⁵¹ *Ibid.*

⁵² *Ibid.*

⁵³ *Ibid.*

⁵⁴ *Ibid.*

psychologist behind the Humm-Wadsworth Temperament Scale, also had a significant conflict of interest in his test. Unlike previous test developers, Doncaster Humm had no academic affiliation, thus relied upon the continued financial success of the Humm-Wadsworth Temperament Scale.⁵⁶ To ensure the continued success of the test, Doncaster Humm routinely shaped scientific debate and immediately contested negative concerns regarding the Humm-Wadsworth Temperament Scale in academic journals.⁵⁷ Ultimately, Doncaster Humm's academic acumen and Guy Wadsworth's industrial executive influence, combined with their marketing savvy achieved industry acceptance of the Humm-Wadsworth Temperament Scale as a valid personnel selection instrument.

The race to develop and market multidimensional personality testing in order to identify undesirable applicants or employees, limited research and resulted in questionable analysis and validation of results. Many tests failed to actually predict employee performance by identifying the undesirable individuals.⁵⁸ The analysis of results from a variety of multidimensional tests led researchers to conclude "...it appears that the type of personality test used is of little or no value as part of a battery of tests used in personnel selection, since it will predict neither success nor the attitudes of colleagues."⁵⁹ However, despite the negative concerns and conclusions of questionable

⁵⁵ *Ibid.*, 174

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*

⁵⁹ Bennett and Gordon in *Ibid.*, 173

results from an array of multidimensional personality testing instruments, the use and marketing of the products excelled.⁶⁰

Regardless of the questionable results, successful marketing or thriving personnel selection departments, the onus of the multidimensional personality test prior to the Second World War was to identify maladjusted applicants and employees. Following on the work of Gordon Allport and H.S. Odbert in the field of trait psychology and John Watson's behaviourism, Raymond Cattell devised the Sixteen Personality Factor Questionnaire to measure the personality traits he determined spanned the multidimensional array of individual personality.⁶¹ By means of intuition and empirical analysis, Cattell created and clustered bi-polar terms from the 4,504 words identified by Allport and Odbert in their first category of generalized and personalized determining tendencies to develop 35 specific trait variables.⁶² To further reduce the trait variables to the specific traits of individual personality, Raymond Cattell conducted rudimentary factor analysis on the inter-relations of the 35 specific trait variables, revealing 12 unique factors.⁶³ The establishment of the 16 Personality Factor Questionnaire encompassed the 12 unique personality factors from the rudimentary factor analysis, as well as four relevant to the domain of the questionnaire.⁶⁴ The use of factor analysis successfully

⁶⁰ *Ibid.*

⁶¹ *Ibid.*

⁶² John, Angleitner and Ostendorf, *The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research*, 171-203.

⁶³ *Ibid.*

enabled a useful analysis of Allport and Odbert's generalized and personalized determining tendencies beyond an exhaustive list of terms related to specific traits to 12 unique personality factors to create a truly multidimensional personality test.

In the advent of the Second World War, the field of psychology had shifted to a more humanistic approach centered on the Hierarchy of Needs envisioned by Abraham Maslow.⁶⁵ The resultant shift in psychology theory "...that man must be studied as a whole person did little to stimulate interest in trait measurement."⁶⁶ Much of the personality trait and factor work of Raymond Cattell encountered insignificant analysis and advancement neither within academia nor among personnel selection in the industrial-organizational sector.⁶⁷ The backlash of the unreliable predictability of initial multidimensional testing for maladjustment and the move to humanistic theory relegated personality trait and factor analysis to the shadows of psychology. However, some research continued within U.S. government organizations, particularly the United States Air Force with Ernest Tupes and Raymond Christal.

While the majority of the psychological community and general public were ignoring the field of personality research, Raymond Christal and particularly Ernest

⁶⁴ *Ibid.*

⁶⁵ Zalenski and Raspa, *Maslow's Hierarchy of Needs: A Framework for Achieving Human Potential in Hospice*, 1120-1127.

⁶⁶ Ernest C. Tupes and Raymond E. Christal, "Recurrent Personality Factors Based on Trait Ratings," *Journal of Personality* 60, no. 2 (06, 1992), 226, <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9208170746&site=ehost-live>.

⁶⁷ John, Angleitner and Ostendorf, *The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research*, 171-203.

Tupes were actively conducting personality research for United States Air Force. The genre of the research conducted by Tupes and Christal focused on the prediction of future performance and behaviour from an analysis of individual personality traits.⁶⁸ Instead of chronically and systematically searching for the maladjusted personality, Tupes and Christal sought to determine the personality traits conducive to future behaviour and performance.⁶⁹ Based on their individual and collaborative research, Tupes and Christal surmised "...that ratings on personality traits are useful predictors of future behaviour..."⁷⁰ contrary to the academic analysis of the initial multidimensional personality tests circulating prior to the Second World War."⁷⁰

To further advance the field of personality trait research and the predictive qualities of personality traits in future behaviour, Ernest Tupes and Raymond Christal conducted factor analysis of the 35 trait variables hypothesised by Raymond Cattell.⁷¹ The factor analysis included the re-analysis of the personality trait data from two of the datasets on which Cattell conducted his own factor analysis, Tupes and Christal datasets as well as two independent datasets.⁷² The results of the factor analysis indicated "...[i]n each analysis five fairly strong [consistent] rotated factors emerged."⁷³ From the analysis, Tupes and Christal identified the five consistent personality factors as *Surgency*,

⁶⁸ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*, 226

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ *Ibid.*, 232

*Agreeableness, Dependability, Emotional Stability and Culture.*⁷⁴ The factor analysis of the eight semi-independent datasets also revealed the "...results of these analyses clearly indicate[d] that differences in samples, situations, raters, and lengths and kinds of acquaintanceship have little effect on the factor structure underlying ratings of personality traits."⁷⁵

The significance of the research, analysis and conclusions of Ernest Tupes and Raymond Christal failed to appear in the public domain for many years. The conclusions surrounding the five consistent personality factors identified by Tupes and Christal were published as a Technical Report for the United States Air Force and subsequently failed to garner any academic discussion regarding agreement or disagreement with their findings.⁷⁶ In addition, academia and the general public were enveloped by humanistic theory and indifferent to the abundance of lacklustre personality test predictions.

The decades following the Second World War witnessed unparalleled growth in the number of personality tests claiming to predict any and all aspects of the behaviour of applicants and employees. "Each new test ha[d] been greeted with an enthusiasm that gradually weakened as evidence accumulated that it had not lived up to its earlier

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*, 244

⁷⁶ John M. Digman and Naomi Takemoto-Chock, "Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies," *Multivariate Behavioral Research* 16, no. 2 (04, 1981), 149-170, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1981-20133-001&site=ehost-live>.

promise.”⁷⁷ The growth of the industrial complex and the organizational behaviour sector provided an eager marketplace for the predictive qualities of personality testing. Many personality testing measures were created to meet the demand of the market without sufficient, and many times, any validation or analysis of the stated predictive capabilities.⁷⁸ The results of personality testing conducted by personnel selection departments and human resource departments generally failed to provide any prediction of future behaviour or performance of a prospective employee or an in-house employee.⁷⁹ However, “...there seem[ed] to be a genuine need to predict the kinds of behavior influenced by personality – the “will do” as opposed to the “can do” aspects of behaviour on the job.”⁸⁰ While independent academic research had proved the predictive capabilities of personality traits and the general public believed personality testing could successfully predict human behaviour in the workplace, scores of personality test developers failed to ascertain the validity of their tests.

The publishing of the damning report, *Validity of Personality Measures in Personnel Selection* by Robert Guion and Richard Gottier virtually eliminated the need for personality testing in personnel selection and subsequently nullified the need for further personality trait and behaviour research. “The best that can be said is that in *some*

⁷⁷ Robert M. Guion and Richard F. Gottier, "Validity of Personality Measures in Personnel Selection," *Personnel Psychology* 18, no. 2 (1965), 136, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1965-16520-001&site=ehost-live>.

⁷⁸ *Ibid.*

⁷⁹ ROBERT M. GUION, "Personnel Selection," *Annual Review of Psychology* 18 (1967), 191-216, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1968-04637-001&site=ehost-live>; Guion and Gottier, *Validity of Personality Measures in Personnel Selection*, 135-164.

⁸⁰ *Ibid.*, 151

situations, for *some* purposes, *some* personality measures can offer helpful predictions.”⁸¹

The uncomplimentary report, in conjunction with the focus of Abraham Maslow’s Hierarchy of Needs and George Kelly’s cognitive psychology probably reduced the will of academia to focus attention on the testing of personality traits or to attempt to rationalize and establish taxonomy of the consistent personality factors.

The five robust personality factors identified by Ernest Tupes and Raymond Charles remained virtually unnoticed and lacked scientific scrutiny for many years following the Robert Guion and Richard Gottier report calling to question the predictive accuracy of personality testing. However, the lack of research to formalize a concise and deliberate taxonomy of the five robust personality factors created a vicious circle among academia and the general public to develop, create and establish weak personality trait tests with limited to nil predictive capabilities.⁸² In order to fathom the development of a true predictive capability from personality the taxonomy of the five robust personality factors had to be established.

The research to formalize the five robust personality factors, originally identified by Ernest Tupes and Raymond Christal slowly began to resurface with studies and reports by John Digman et al. “[T]he five robust factors, which have been shown to cut across quite diverse collections of raters and ratees, are neither inscrutable nor are

⁸¹ *Ibid.*, 159

⁸² *Ibid.*

they new concepts.”⁸³ Regardless of the fact Digman and Naomi Takemoto-Chock determined the same five robust factors as Tupes and Christal, they did not use the same or similar taxonomy. The Digman and Takemoto-Chock factors were *Friendly Compliance vs. Hostile Non-compliance, Extraversion vs. Introversion, Ego Strength vs. Emotional Disorganization, Will to Achieve, and Intellect*.⁸⁴ Such a departure from the original taxonomy proposed by Tupes and Christal further perpetuated the inability to truly study the factors beyond the level achieved by Tupes and Christal some 20 years earlier:

In many ways it seems remarkable that such stability should be found in an area which to date has granted anything but consistent results. Undoubtedly the consistency has always been there, but it has been hidden by inconsistency of factorial techniques and philosophies, the lack of replication using identical variables, and disagreement among analysts as to factor titles. None of the factors identified in this study are new. They have been identified many times in previous analyses, although they have not always been called by the same names.⁸⁵

The same problems surrounding the creation of an acceptable taxonomy continued despite successive factor analyses demonstrating the identical five robust factors.⁸⁶

⁸³ Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 166.

⁸⁴ *Ibid.*

⁸⁵ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.

The taxonomy of the five robust factors was solved some 30 years after Ernest Tupes and Raymond Christal successfully identified the personality factors. The study, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis* conducted by Murray Barrick and Michael Mount provided sufficient evidence of the predictive capability of the five robust personality factors to warrant further academic discussion and study. Throughout the ensuing discussion, reference to the five robust personality factors continued to endorse the taxonomy established by Barrick and Mount, specifically defining the five personality factors as *Extraversion, Emotional Stability, Agreeableness, Conscientiousness, and Openness to Experience*.⁸⁷ Having agreed upon the taxonomy of the big five, research conducive to further the predictive capabilities of individual personality commenced.

In summary, the latter portion of this chapter examined the history and evolution of personality testing. First, the Woodworth Personal Data Sheet, proposed by Robert Woodworth was examined as the first assessment of a single dimension of personality. Second, the Humm-Wadsworth Temperament Scale conceived by Doncaster Humm and Guy Wadsworth Jr. was discussed as one of the first multi-dimensional personality tests.

⁸⁶ Paul T. Costa and Robert R. McCrae, "Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory," *Journal of Personality Assessment* 64, no. 1 (02, 1995), 21-50, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1995-23677-001&site=ehost-live>.; Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.; John M. Digman, "Personality Structure: Emergence of the Five-Factor Model," *Annual Review of Psychology* 41 (1990), 417-440, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1990-17097-001&site=ehost-live>.

⁸⁷ Murray R. Barrick and Michael K. Mount, "The Big Five Personality Dimensions and Job Performance: A Meta-Analysis," *Personnel Psychology* 44, no. 1 (Spring91, 1991), 1-26, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9609192320&site=ehost-live>. (Barrick and Mount, 1991)

Third, the Sixteen Personality Factor Questionnaire developed by Raymond Cattell was overviewed with emphasis on its contribution to the current five factors of personality. Fourth, the demise of personality testing through the 1960s was discussed and the effects of Robert Guion and Richard Gottier were considered. Fifth, the revival of personality testing by Murray Barrick and Michael Mount, and John Digman, from the work of Ernest Tupes and Raymond Christal for the US Air Force in the late 1950s was examined.

The following chapter will examine the five factors of personality originally discovered by Ernest Tupes and Raymond Christal, and brought to the forefront of the personality discussion by Murray Barrick and Michael Mount.

Chapter 3 – The Five Factors of Personality

The psychological theories encompassing personality are nearly diverse and complex as human personality itself. Most significant of the previously discussed personality theories was that of Gordon Allport and H.S. Odbert's trait theory. The magnitude of the almost 18,000 personality traits would have posed significant difficulties in managing associated research. Raymond Cattell quickly discovered the difficulties of managing 18,000 personality traits as he strived to develop unique personality factors. Ernest Tupes and Raymond Christal recognized the errors of Cattell and with the advent of modern computing devices developed five factors of personality.

This chapter will examine the tenets of the five factors of personality originally put forward by Ernest Tupes and Raymond Christal in order to understand and appreciate the accepted taxonomy. First, the dimension of extraversion is considered and related to its associated personality traits. Second, the emotional stability factor is examined and juxtaposed with its underlying traits of personality. Third, the naming convention and personality facets of the dimension of agreeableness are observed. Fourth, the dimension of conscientiousness is demonstrated in conjunction with its foundational personality traits. Fifth, the factor of openness to experience is considered and related to its associated personality facets.

The trait theory studies conducted by Gordon Allport and H.S. Odbert and culminating in the thousands of personality trait terms in 1936 was the beginning of the

five factors of personality commonly referred to today by the taxonomy firmly established by Murray Barrick and Michael Mount some 55 years later in 1991. The comprehensive study conducted by Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis* identified the same five factors as successive preceding academics and researchers.⁸⁸ However, the difference with the subject Barrick and Mount study was the comprehensive meta-analysis conducted to verify the big five and the predictive capabilities of each factor or dimension. Such an extensive and comprehensive analysis had not been previously conducted and warranted further independent academic research, study and analysis to verify or challenge the predictive capabilities of the big five personality dimensions.

The taxonomy of the big five personality dimensions prior to 1991 appeared to be a hodgepodge of dissimilar ideas, rhetoric and naming rights. Murray Barrick and Michael Mount identified the big five personality dimensions very similarly to Ernest Tupes and Raymond Christal; however, in considerable contrast to the ever-changing taxonomy proposed by Digman et al. Table 1 below captures the taxonomy of the big five personality dimensions from Tupes and Christal naming convention, through a number of Digman et al iterations to accepted Barrick and Mount taxonomy.

⁸⁸ *Ibid.*

Big Five Dimensions	Tupes and Christal	Digman and Takemoto-Chock	Digman	Barrick and Mount
Dimension 1	Surgency	Extraversion vs. Introversion	Extraversion	Extraversion
Dimension 2	Emotional Stability	Ego Strength vs. Emotional Disorganization	Neuroticism	Emotional Stability
Dimension 3	Agreeableness	Friendly Compliance vs. Hostile Noncompliance	Friendly Compliance	Agreeableness
Dimension 4	Dependability	Will to Achieve	Will to Achieve	Conscientiousness
Dimension 5	Culture	Intellect	Intellect	Openness to Experience

Table 1. History of Personality Dimensions

In order to consider the use the five factor model of personality as a basis for analyzing the recruitment and retention prospects of Canadian Forces recruits and current serving Canadian Forces members, both officers and non-commissioned members, an understanding of the big five personality factors is required beyond taxonomy.

Extraversion

The dimension of *extraversion* had a number of names throughout the process of factor analyzing the associated personality traits. Raymond Cattell referred to the dimension as *surgency*, while others have used the currently accepted name of *extraversion*; some have also used another spelling of this dimension of personality: *extroversion*.⁸⁹ For the purposes of this document, *extraversion*, the taxonomy proposed

by Murray Barrick and Michael Mount and widely accepted by personality academia is applied.

One must also appreciate the personality traits associated with the dimension of *extraversion*. Using the work of Raymond Cattell, Ernest Tupes and Raymond Christal characterized the dimension of *extraversion* with the traits of "...Talkativeness, Frankness, Adventurousness, Assertiveness, Sociability, Energetic, Composed, Interest in Opposite Sex, and Cheerfulness."⁹⁰ *Extraversion* had also been defined by the "facets" developed by of Paul Costa, Jr. and Robert McCrae of warmth, gregariousness, assertiveness, activity, excitement seeking and positive emotions.⁹¹ Murray Barrick and Michael Mount illustrated *extraversion* with "[t]raits frequently associated with it include[d] being sociable, gregarious, assertive, talkative, and active."⁹²

Emotional Stability

⁸⁹ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.; Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 1-26.; Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.; John M. Digman and Jillian Inouye, "Further Specification of the Five Robust Factors of Personality," *Journal of Personality and Social Psychology* 50, no. 1 (01, 1986), 116-123, <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1986-16982-001&site=ehost-live>.

⁹⁰ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 233.

⁹¹ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.

⁹² Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 3.

The second factor of personality, *emotional stability*, retained a link to emotion throughout the arduous and complex task of factor analyzing the associated personality traits. Although Ernest Tupes and Raymond Christal referred to the dimension as *emotional stability*, John Digman and Naomi Takemoto-Chock chose to identify the personality factor as *ego strength vs. emotional disorganization*; subsequently, in a follow on study Digman qualified the dimension as *neuroticism*.⁹³ Murray Barrick and Michael Mount returned to the roots of the personality factor established by Tupes and Christal and re-established the currently accepted term of *emotional stability* to define the second dimension of personality.⁹⁴ For the purposes of this document the taxonomy proposed by Barrick and Mount of *emotional stability* as is applied.

An understanding of the spectrum of personality traits encompassed by the factor of *emotional stability* is paramount. Using the work of Raymond Cattell, Ernest Tupes and Raymond Christal characterized the dimension of *emotional stability* with the primary personality traits of "...Not Neurotic, Placid, Poised, Not Hypochondriacal, Calm, Emotionally Stable, and Self-Sufficient."⁹⁵ In addition, Tupes and Christal also determined the secondary personality traits of "...Lack of Jealousy, Emotional Maturity, Cooperativeness, Trustfulness, Adaptability, Responsibility, Perseverance, and

⁹³ Digman, *Personality Structure: Emergence of the Five-Factor Model*, 417-440.; Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.

⁹⁴ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 1-26.

⁹⁵ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 233.

Independent-Mindedness”⁹⁶ contributed to the dimension of *emotional stability*.

Throughout the taxonomy challenges a number of researchers defined the inverse of *emotional stability*, “neuroticism,” as the corresponding factor of personality.⁹⁷ Paul Costa, Jr. and Robert McCrae defined neuroticism by the facets of anxiety, angry, hostility, depression, self-consciousness, impulsiveness and vulnerability.⁹⁸

Interestingly, Murray Barrick and Michael Mount illustrated *emotional stability* with the “traits associated with this factor include[d] being anxious, depressed, angry, embarrassed, emotional, worried and insecure.”⁹⁹ The Barrick and Mount definition of traits associated with *emotionally stability* are in direct contrast and inverse to the traits purposed by Tupes and Christal. The Barrick and Mount *emotional stability* traits coincide with the facets of Costa and McCrae’s neuroticism, but their taxonomy of the personality dimension mimics that of Tupes and Christal.

Agreeableness

The *agreeableness* factor had a number of names throughout the process of factor analyzing the associated personality traits. While Ernest Tupes and Raymond Christal used the term *agreeableness* to refer to the dimension, John Digman and Naomi

⁹⁶ *Ibid.*, 233

⁹⁷ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.; Digman, *Personality Structure: Emergence of the Five-Factor Model*, 417-440.

⁹⁸ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.

⁹⁹ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 4.

Takemoto-Chock chose to identify the personality factor as *friendly compliance vs. hostile noncompliance*.¹⁰⁰ Subsequently, in a follow on study Digman qualified the dimension as simply *friendly compliance*.¹⁰¹ Murray Barrick and Michael Mount returned to the roots of the personality factor established by Tupes and Christal and re-established the currently accepted term of *agreeableness* to define the third dimension of personality.¹⁰² For the purposes of this document, *agreeableness*, the taxonomy as proposed by Murray Barrick and Michael Mount and widely accepted by personality academia is applied.

An appreciation of the personality traits associated with the dimension of *agreeableness* provides a base to expand or focus traits relevant to a particular situation. Using the work of Raymond Cattell, Ernest Tupes and Raymond Christal characterized the dimension of *agreeableness* with the traits of “...Good-Natured, Not Jealous, Emotionally Mature, Mildness, Cooperativeness, Trustfulness, Adaptability, Kindliness, Attentiveness to People and Self-Sufficiency.”¹⁰³ *Extraversion* had also been defined by the “facets” developed by Paul Costa, Jr. and Robert McCrae of trust, straightforwardness, altruism, compliance, modesty and tender-mindedness.¹⁰⁴ Murray

¹⁰⁰ *Ibid.*; Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.; Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.

¹⁰¹ Digman and Inouye, *Further Specification of the Five Robust Factors of Personality*, 116-123. Digman, *Five Robust Trait Dimensions: Development, Stability, and Utility*, 195-214.

¹⁰² Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 1-26.

¹⁰³ Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 233.

Barrick and Michael Mount illustrated *agreeableness* with “[t]raits associated with this dimension include[d] being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant.”¹⁰⁵

Conscientiousness

The dimension of *conscientiousness* has had a number of names throughout the process of factor analyzing the associated personality traits. Ernest Tupes and Raymond Christal referred to the dimension as *dependability*, while others have used the term *will to achieve*.¹⁰⁶ For the purposes of this document, *conscientiousness*, the taxonomy as proposed by Murray Barrick and Michael Mount and widely accepted by personality academia is applied.

One must also understand the personality traits associated with the dimension of *conscientiousness*. Using the work of Raymond Cattell, Ernest Tupes and Raymond Christal characterized the dimension of *conscientiousness* with the traits of “...Orderliness, Responsibility, Conscientiousness, Perseverance, and Conventionality.”¹⁰⁷ Tupes and Christal also determined the traits of

¹⁰⁴ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.

¹⁰⁵ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 4.

¹⁰⁶ Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.; Digman and Inouye, *Further Specification of the Five Robust Factors of Personality*, 116-123.; Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.

“...Cooperativeness, Mildness, and Emotional Stability” factored positively with the dimension; however, with less congruency.¹⁰⁸ *Conscientiousness* had also been defined by the “facets” developed by Paul Costa, Jr. and Robert McCrae of competence, order, dutifulness, achievement striving, self-discipline and deliberation.¹⁰⁹ Murray Barrick and Michael Mount noted “...Conscientiousness reflects dependability; that is, being careful, thorough, responsible, organized, and planful.”¹¹⁰ In addition, Barrick and Mount incorporated the will to achieve traits, specifically the “...volitional variables, such as hardworking, achievement-oriented, and persevering.”¹¹¹

Openness to Experience

The final factor of personality, *openness to experience*, has had the greatest variety of names to describe the factor and its associated personality traits. Ernest Tupes and Raymond Christal referred to the dimension as *culture*, while Digman et al have used the term *intellect* to label the fifth dimension of personality.¹¹² For the purposes of this

¹⁰⁷ *Ibid.*, 233

¹⁰⁸ *Ibid.*, 233

¹⁰⁹ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.

¹¹⁰ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 4.

¹¹¹ *Ibid.*, 4

¹¹² Digman and Inouye, *Further Specification of the Five Robust Factors of Personality*, 116-123.; Digman and Takemoto-Chock, *Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies*, 149-170.; Tupes and Christal, *Recurrent Personality Factors Based on Trait Ratings*, 225-251.

document, *openness to experience*, the taxonomy as proposed by Murray Barrick and Michael Mount and widely accepted by personality academia is applied.

An appreciation of the personality traits associated with the dimension of *openness to experience* provide a foundation to understanding the factor. Using the work of Raymond Cattell, Ernest Tupes and Raymond Christal characterized the dimension of *openness to experience* with the traits of “...Cultured, Esthetically Fastidious, Imaginative, Socially Polished, and Independent-Minded.”¹¹³ In addition, Tupes and Christal also determined the secondary personality traits of “...Energetic, Poise, Emotional Stability, and all the variables in [Conscientiousness]”¹¹⁴ contributed positively to the dimension of *openness to experience*. *Openness to experience* had also been defined by the “facets” developed by of Paul Costa, Jr. and Robert McCrae of fantasy, aesthetics, feelings, actions, ideas and values.¹¹⁵ Murray Barrick and Michael Mount illustrated *openness to experience* as “[t]raits commonly associated with this dimension include[d] being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive.”¹¹⁶

The results of the meta-analysis of personality traits conducted by Murray Barrick and Michael Mount provided a qualified academic consensus for the five factor model of

¹¹³ *Ibid.*, 244

¹¹⁴ *Ibid.*, 244

¹¹⁵ Costa and McCrae, *Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory*, 21-50.

¹¹⁶ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 5.

the five personality dimensions and common baseline taxonomy to enhance and further research of personality. Barrick and Mount clearly understood the importance of the meta-analysis and ensuing taxonomy:

The emergence of the 5-factor model has important implications for the field of personnel psychology. It illustrates that personality consists of five relatively independent dimensions which provide a meaningful taxonomy for studying individual differences. In any field of science, the availability of such an orderly classification scheme is essential for the communication and accumulation of empirical findings.¹¹⁷

The absence of personality dimension taxonomy prior to the Barrick and Mount meta-analysis of personality traits limited the advancement of personality research beyond the hodgepodge of dissimilar ideas, rhetoric and naming rights. As evidenced above, Barrick and Mount understood the need to establish a logical taxonomy for all researchers and academics to refer, verify and challenge the dimensions of personality. Without the fundamental classification of the dimensions of personality, researchers and academics may have continued with dissimilar taxonomies for years curtailing the progress of research and studies to determine the predictability and reliability of an individual's personality to forecast future behaviour.

¹¹⁷ *Ibid.*, 5

In summary, this chapter examined the tenets of the five factors of personality originally put forward by Ernest Tupes and Raymond Christal in order to understand and appreciate the accepted taxonomy. First, the dimension of extraversion was considered and related to its associated personality traits. Second, the emotional stability factor was examined and juxtaposed with its underlying traits of personality. Third, the naming convention and personality facets of the dimension of agreeableness were observed. Fourth, the dimension of conscientiousness was demonstrated in conjunction with its foundational personality traits. Fifth, the factor of openness to experience was considered and related to its associated personality facets.

The following chapter will examine the current recruiting, selection, advancement and retention approaches and methodologies of the Canadian Forces.

Chapter 4 – The Lack of Personality in the Canadian Forces

Personnel selection is a process culminating in a decision to hire one or more applicants for employment and not to hire others. The decision to hire is one of a family of personnel decisions, including promotions and terminations, that should not be made without foundation.¹¹⁸

The basic fundamentals of recruitment, selection, advancement and retention have remained consistent for many years. Small businesses, government organizations and large corporations with dedicated human resource departments, strive to hire the right people for the right job at the right time and maintain employment of the most capable and willing personnel through progressive advancement.¹¹⁹ However, the process of identifying the right person for the right job at the right time poses significant challenges for the broad spectrum of employers.

How does an organization identify the right person? Small, medium and large organizations generally use predictive assessments to ensure the proper personnel are recruited and selected to join and excel within the organization. The means and methods of predicting the most promising potential employees span the spectrum of selection techniques and procedures. Robert Guion and Wade Gibson identified assessments of general mental ability, structured and unstructured interviews, personality assessments,

¹¹⁸ Guion and Gibson, *Personnel Selection and Placement*, 349.

¹¹⁹ Piotrowski and Armstrong, *Current Recruitment and Selection Practices: A National Survey of Fortune 1000 Firms*, 489-496.

selection centers, and assessments of behaviour as commonly used predictors of the ability of a potential employee.¹²⁰ A single assessment method or any combination of predictive assessment methods is used in the public and private sectors to predict the potential success of the applicant on the job and within the organization. The methods of prediction enable the small business owner through to the human resources department of a large corporation to select the prospective employees predicted to be most capable of achieving the desired employment results.

This chapter will examine the basic fundamentals of recruiting, selection, advancement and retention of the Canadian Forces. First, the recruiting and selection process of the Canadian Forces is discussed, with emphasis on the employment of the Canadian Forces Aptitude Test. Second, the Canadian Forces Aptitude Test is examined as a predictive assessment of short-term capabilities in order to screen and select applicants. Third, the absence of a long-term predictive assessment for advancement and retention is discussed.

The Canadian Forces utilizes a combination of predictive assessment methods to select and recruit prospective non-commissioned members and officers. The initial and most basic predictive assessment method employed by the Canadian Forces is the Canadian Forces Aptitude Test. The use of the Canadian Forces Aptitude Test satisfies a dual requirement of the selection and recruiting process by screening non-commissioned member and officer applicants and classifying successfully screened non-commissioned

¹²⁰ Guion and Gibson, *Personnel Selection and Placement*, 349-374.

member applicants into applicable military occupations.¹²¹ Follow-on predictive assessments are conducted in the form of an academic and background assessment, structured interview and additional aptitude tests for a number of officer military occupations.¹²² Employing the Canadian Forces Aptitude Test, as a dual purpose predictive assessment of potential ability, efficiently and effectively reduces the pool of applicants to only those predicted to have the cognitive ability to succeed within the Canadian Forces.

. To quickly eliminate the applicants with the least ability for employment within the Canadian Forces, a standardized objective cognitive ability assessment is conducted by means of the Canadian Forces Aptitude Test.¹²³ The Canadian Forces Aptitude Test comprises three subscales to assess verbal skills, spatial ability and problem solving skills.¹²⁴ The raw scores of the three subscales of the Canadian Forces Aptitude Test are converted to a percentile for each subscale score as well as the overall test score.¹²⁵ The percentiles are normalized for the official languages of Canada, French and English, and rank level, officer or non-commissioned member.¹²⁶ The employment of cut-off scores corresponding with the percentiles specific to the general cognitive ability requirements

¹²¹ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

¹²² Girard, *Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria*

¹²³ D. C. Scholtz, *Validation of the CFAT and Establishment of Cutoff Scores for Steward Selection* (Ottawa: Director Human Resources Research and Evaluation,[2004]).

¹²⁴ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

¹²⁵ Scholtz, *Validation of the CFAT and Establishment of Cutoff Scores for Steward Selection*

¹²⁶ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

of military occupations efficiently and effectively screens the pool of applicants, eliminating those without the general cognitive ability for any military occupations.

The remaining successful non-commissioned member applicants are classified according to their general mental ability into applicable non-commissioned member military occupation families.¹²⁷ Through the use of varying percentile cut-off scores specific to each of the military occupation families: administrative, mechanical, general military, operator and technical, non-commissioned member applicants are classified into one or more of the military occupation families.¹²⁸ The percentile cut-off scores for the non-commissioned member military occupation families range from the 40th percentile of the total score of the Canadian Forces Aptitude Test for the mechanical, operator and technical families to the 20th percentile of the problem solving subscale for the general military family.¹²⁹ Using the general cognitive ability percentile cut-off scores for the classification of non-commissioned member applicants, the Canadian Forces Aptitude Test objectively predicts the potential success of applicants to complete the initial phase of military occupation training.¹³⁰ The establishment of percentile cut-off scores equivalent to the general cognitive ability requirements of non-commissioned member military occupations provides a rapid and succinct method to classify applicants into military occupations based upon their potential to successfully complete the initial phase

¹²⁷ *Ibid.*

¹²⁸ Girard, *Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria*

¹²⁹ *Ibid.*

¹³⁰ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

of military occupation training. However, no further objective predictive assessments are conducted to determine the non-commissioned member applicant's potential for success within neither the assigned military occupation nor their potential for long-term success within the Canadian Forces.

The successful officer applicants remaining following the Canadian Forces Aptitude Test screening process are classified into neither military occupation families nor military occupations based on their general cognitive ability percentile scores. Following the initial screening conducted using the Canadian Forces Aptitude Test successful officer applicants are subjected to further predictive assessments, such as structured interviews, academic and background assessments, as well as additional aptitude tests for specific officer occupations. However, the Canadian Forces does not conduct any further objective prediction of the potential for success of the officer applicant in a particular military occupation or their potential for long-term success within the Canadian Forces.

The Canadian Forces Aptitude Test provides a robust method to screen all applicants and concurrently classify non-commissioned member applicants in accordance with the general cognitive ability of each applicant. Applicants failing to meet the minimum cognitive requirements of the Canadian Forces are quickly and inexpensively screened from the cohort. The remaining non-commissioned member applicants are classified into military occupation families predicted upon the potential of the applicant to complete the initial phase of military occupation training. However, the Canadian

Forces Aptitude Test fails to provide an objective prediction of the long-term potential success of the applicant in a military occupation and the applicant's long-term potential success within the Canadian Forces for both officers and non-commissioned members.

The Canadian Forces Aptitude test was not designed or validated to provide a long-term prediction of the success of a non-commissioned member recruit or officer recruit.¹³¹ The Canadian Forces does not currently have a broad spectrum method or approach to assess or predict the long-term success of serving non-commissioned members and officers. The sole method of predicting the potential of non-commissioned members and officers in the Canadian Forces is the subjective Canadian Forces Personnel Appraisal System. The purpose of the Canadian Forces Personnel Appraisal System is "...to develop CF members through constructive feedback and to accurately assess the level of demonstrated performance and potential for career administration purposes."¹³² The assessment and feedback from the Canadian Forces Personnel Appraisal System provides a subjective short-term prediction of the potential of each non-commissioned member and officer serving in the Canadian Forces every year. However, the subjective nature of the Canadian Forces Personnel Appraisal System assessment conducted by the immediate supervisor skews the demonstrated performance and potential to the mindset of the assessor. In order for the Canadian Forces to achieve the greatest benefit from a predictive assessment of potential, the assessment should be objective and assess the

¹³¹ Girard, *Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria*

¹³² Chief Military Personnel, "Canadian Forces Personnel Appraisal System (CFPAS)," National Defence and the Canadian Forces, <http://www.cmp-cpm.forces.gc.ca/cfpas-sepfc/index-eng.asp> (accessed 02/04, 2010).

long-term potential of the individual, based on the individual's will and ability, opposed to the Canadian Forces Personnel Appraisal System's subjective short-term potential assessment and the objective short-term potential assessment of the Canadian Forces Aptitude Test.

A more reliable and valid long-term objective assessment to predict the potential of an applicant to succeed within the Canadian Forces could provide significant savings. Ideally the long-term success of non-commissioned members and officers would be predicted during the selection and recruiting process of the Canadian Forces. Based on the selection and recruiting of non-commissioned member recruits and officer recruits possessing the predicted potential to excel in the Canadian Forces, fewer recruits would need to be selected and recruited as fewer recruits would fail initial military training. In addition to requiring fewer recruits at the beginning of a career in the Canadian Forces, fewer recruits would be required to replace non-commissioned members and officers leaving the Canadian Forces. The rates of retention of non-commissioned members and officers would improve as the individual's military occupation and career progression would coincide with the objective assessment of the individual's future potential. Matching the military occupation of non-commissioned members and officers to their future potential during the selection and recruiting process would ensure a more successful career requiring less training, less administration and ultimately more time conducting successful operations. To meet the demands of fiscal priorities, the dynamics of society and the recruiting, selection, advancement and retention of personnel for and

within the Canadian Forces an analysis of objective personality assessment is warranted to predict future potential.

In summary, this chapter examined the basic fundamentals of recruiting, selection, advancement and retention of the Canadian Forces. First, the recruiting and selection process of the Canadian Forces was discussed, with emphasis on the employment of the Canadian Forces Aptitude Test. Second, the Canadian Forces Aptitude Test was examined as a predictive assessment of short-term capabilities to screen and select applicants. Third, the absence of a long-term predictive assessment for advancement and retention was discussed.

The following chapter will examine the predictive capabilities of the five factors of personality.

Chapter 5 – Personality Predicting Performance

The incorporation of personality assessment in a military context occurred nearly a century ago. As discussed earlier, the importance of predicting a soldier's intellectual fitness brought about the first objective personality testing to identify maladjusted American military recruits during the First World War.¹³³ The soldiers of the First World War witnessed a new found madness on the battlefield. Soldiers encountered continuous and horrendous devastation on the battlefield. Many soldiers failed to be able to complete basic and essential tasks. Soldiers experienced traumatic symptoms now commonly associated with Post Traumatic Stress Disorder; however, during the First World War these soldiers were labelled as afflicted with “shell shock” and removed from the front lines, at best, or labelled as cowards and subsequently executed. The distressed mind of the affected soldier was unable to cope with the realities of the First World War, and science and medicine failed to accurately determine the just cause of the perceived ailment. Shell shocked soldiers were seen as maladjusted, hence only emotionally stable, adjusted men were to be recruited into the United States Army.¹³⁴

To achieve a prediction of the emotional stability of recruits for the U.S Army, Robert Woodworth developed the Psychoneurotic Tendencies scale. Through research and analysis, Woodworth established and verified a set of neurotic symptoms to predict the emotional stability of potential recruits. U.S. Army applicants scoring above a

¹³³ Gibby and Zickar, *A History of the Early Days of Personality Testing in American Industry: An Obsession with Adjustment*, 164-184.

¹³⁴ *Ibid.*

threshold number of neurotic tendencies received additional psychiatric screening to verify the emotional stability and the future employability of the possible recruit. The research, design and implementation of the test exceeded the timeframe of the First World War; however, the fundamental nature of the first one-dimensional personality test was established.¹³⁵

The incorporation of Woodworth's Psychoneurotic Tendencies scale to predict the emotional stability of U.S. Army applicants initiated a general theme to identify the maladjusted within the growing industrial complex of North American. The maladjusted were seen to be the weakest link in the performance of the commercial industrial complex.¹³⁶ The screening of the maladjusted from potential employees would ensure greater productivity within the organization. The process of screening applicants to ensure the removal of the maladjusted became the focus of personality testing.

To further improve the screening process of prospective employees, multi-dimensional personality tests were envisioned. The most lucrative of the multi-dimensional personality assessments leading to the Second World War was the Humm-Wadsworth Temperament Scale.¹³⁷ However, as discussed earlier, the predictive capabilities of the Humm-Wadsworth Temperament Scale and the majority of other multi-dimensional personality tests of the era failed to meet the expectations of the

¹³⁵ *Ibid.*

¹³⁶ *Ibid.*

¹³⁷ *Ibid.*

commercial industrial complex.¹³⁸ The rapid advance of the field of personality assessment to identify and screen undesirable applicants resulted in the failure of test developers to fully validate the predictive capabilities of their personality tests.¹³⁹ The lack of validation of the predictive capabilities of the initial groundswell of multi-dimensional personality tests arguably disenfranchised the preponderance of personality tests users and bolstered competing personnel selection techniques and approaches for generations.

This chapter examines the predictive capabilities of the five factors of personality in personnel selection and retention. First, the factor of extraversion is analyzed to determine the predictive capabilities of the positively associated traits, i.e. talkative, outgoing, and extrovert, and the opposite pole of the dimension encompassing traits as quiet, self-absorbed, and introvert. Second, the predictive qualities of emotional stability, encompassing the traits of trustful, responsible, anxious and depressed, are assessed for the selection and retention of personnel. Third, the dimension of agreeableness is examined to conclude the predictive capabilities of its inherent traits, such as cooperative, modest and good-natured. Fourth, an analysis of the predictive capabilities of the dimension of conscientiousness is conducted. Fifth, the openness to experience dimension, encompassing the traits and facets of imaginative, action and original, is examined to determine its predictive capabilities in the field of personnel selection and retention. Sixth, a comparison between two independent meta-analyses of the five factor

¹³⁸ *Ibid.*

¹³⁹ Guion and Gottier, *Validity of Personality Measures in Personnel Selection*, 135-164.

model of personality is conducted to verify and validate the prediction capabilities of personality factors. Finally, a conclusion of the observations is presented and considerations for future use are considered.

Extraversion

The personality dimension of extraversion is commonly seen as a benefit. In the group dynamics of North American culture, people generally gravitate towards the more talkative and outgoing individuals in the group and slowly distance themselves from emotionally cold and quiet people. Murray Barrick and Michael Mount determined extraversion was a valid predictor of performance in occupations dependent on interpersonal skills, specifically managers and sales representatives. Managers and salespeople demonstrated estimated true correlations of 0.18 and 0.15, respectively for the traits encompassed by extraversion.¹⁴⁰

During their meta-analysis of the five dimensions of personality, Barrick and Mount also realized a positive correlation between extraversion and training proficiency. The meta-analysis revealed the dimension of extraversion provided a stronger prediction for training proficiency, an estimated true correlation of 0.26, compared to 0.10 for job proficiency.¹⁴¹

¹⁴⁰ Barrick and Mount, *The Big Five Personality Dimensions and Job Performance: A Meta-Analysis*, 1-26.

¹⁴¹ *Ibid.*

Emotional Stability

The emphasis on the maladjusted throughout the beginning of the twentieth century may be for naught. The meta-analysis of the dimensions of personality conducted by Murray Barrick and Michael Mount revealed limited correlations between emotional stability and job performance, more specifically, occupational relevance, job proficiency and training proficiency. All estimated true correlations were less than 0.13 for occupational relevance and less than 0.09 for job and training proficiency.¹⁴² The rapid conclusion one could erroneously draw from the data would be that the emotional stability of an individual had neither positive nor negative effects on one's occupation, job and training proficiency. Emotional stability was not a predictive factor for job performance. However, one must temper the results with an appreciation that the meta-analysis focused on successfully employed individuals. The data did not reflect the vast array of potential employees screened and subsequently not selected for employment. Barrick and Mount surmised that the highly emotional unstable individuals in society are unable to function in the traditional labour force.¹⁴³

The correlation of emotional stability to professionals demonstrated an outlier. The emotional stability of professionals was analysed to have a negative estimated true correlation of -0.13.¹⁴⁴ The analysis determined that professionals possessed and

¹⁴² *Ibid.*

¹⁴³ *Ibid.*

¹⁴⁴ *Ibid.*

demonstrated neurotic tendencies and traits as opposed to emotionally stable activities and mannerisms. The correlation suggests professionals possessing slightly neurotic traits and tendencies had higher job performance. Hence, a personality assessment for the selection of professionals would be designed to recognize and reward slightly neurotic tendencies instead of traits associated with high emotional stability.

Contrary to the decades of personality testing to identify the maladjusted or emotionally unstable during the first half of the twentieth century, the Murray Barrick and Michael Mount meta-analysis failed to resolve any significant and notable correlation between emotional stability and job performance. The dimension of emotional stability did not demonstrate a predictive capability for either job or training proficiency. The emotional stability of an employed individual had nil effect on the prediction of job performance or proficiency.

Agreeableness

Murray Barrick and Michael Mount assessed the dimension of agreeableness did not demonstrate predictive capabilities for job performance, training proficiency or job proficiency.¹⁴⁵ The estimated true correlations for all occupations were less than 0.11. The performance of an individual in the analysed occupations could not be predicted based upon the dimension of agreeableness. A slightly rude and uncooperative salesperson could achieve the same performance as a courteous and cooperative

¹⁴⁵ *Ibid.*

salesperson. The dimension of agreeableness would not provide an accurate assessment of an individual's future performance.

As well as not providing a basis of prediction for job performance, agreeableness demonstrated a similar lack of predictive capabilities for job and training proficiency. The estimated true correlations for job and training proficiency were less than 0.11 in the meta-analysis conducted by Murray Barrick and Micheal Mount.¹⁴⁶ The job proficiency and training proficiency of an agreeable individual and a slightly argumentative individual were nearly the same. Regardless of the inherent traits and tendencies of agreeableness expressed by individuals, limited to nil prediction of job performance, training proficiency and job proficiency was demonstrated.

Conscientiousness

The dimension of conscientiousness was found to provide the greatest predictive validity of the five personality dimensions.

“[Conscientiousness] was found to be a consistently valid predictor for all occupational groups studied and for all criterion types. Thus, this aspect of personality appears to tap traits which are important to the accomplishment of work tasks in all jobs. That is, those individuals who

¹⁴⁶ *Ibid.*

exhibit traits associated with a strong sense of purpose, obligation, and persistence generally perform better than those who do not.”¹⁴⁷

The estimated true correlations of conscientiousness to job proficiency and training proficiency were identical at 0.23.¹⁴⁸ Potential employees demonstrating conscientious traits; persistence, responsibility, hardworking, etc., would exceed the performance of those exhibiting lackadaisical and carefree tendencies. The observations verified the obvious and validated the predictive capability of conscientiousness for job and training proficiency.

The dimension of conscientiousness also demonstrated strong correlations amongst all occupations for job performance. The estimated true correlations for all occupations ranged from 0.20 for professionals to 0.23 for salespeople.¹⁴⁹ Conscientious employees performed well in all occupations.

“Individuals who are dependable, persistent, goal-oriented and organized tend to be higher performers on virtually any job; [whereas], those who are careless, irresponsible, low achievement striving and impulsive tend to be lower performers on virtually any job.”¹⁵⁰

¹⁴⁷ *Ibid.*, 18

¹⁴⁸ *Ibid.*

¹⁴⁹ *Ibid.*

Based on the Murray Barrick and Michael Mount meta-analysis data, the personality dimension of conscientiousness successfully predicted the job performance of all occupations.

Openness to Experience

The traits of attributed to the openness to experience dimension did not correlate to the job performance. All estimated true correlations for job performance on the Murray Barrick and Michael Mount meta-analysis were less than 0.09.¹⁵¹ The perceived strengths of creativity and open-mindedness were not predictors of overall job performance; however, the dimension did demonstrate predictive capabilities for training.

As opposed to the overall job performance, openness to experience provided a significant correlation to training proficiency. The training proficiency correlation observed in the Murray Barrick and Michael Mount meta-analysis exceeded all other correlations. Openness to experience revealed an estimated true correlation of 0.26 for job proficiency.¹⁵² “Being active, sociable, and open to new experiences may lead

¹⁵⁰ Michael K. Mount and Murray R. Barrick, "Five Reasons Why the "Big Five" Article has been Frequently Cited," *Personnel Psychology* 51, no. 4 (Winter98, 1998), 851, <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=1497692&site=ehost-live>.

¹⁵¹ Murray R. Barrick, Michael K. Mount and Timothy A. Judge, "Personality and Performance at the Beginning of the New Millennium: What do we Know and Where do we Go Next?" *International Journal of Selection & Assessment* 9, no. 1 (03, 2001), 9, <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=5053475&site=ehost-live>.

¹⁵² *Ibid.*

individuals to be more involved in training and consequently, learn more.”¹⁵³ The results of the meta-analysis verified that people willing to accept new ideas and approaches and discuss their understanding of new concepts achieve greater training proficiency.

Meta-Analysis Comparison

Independent and challenging meta-analyses and research have corroborated and verified the correlations and predictive abilities of the five factor model of personality to predict future behaviour.¹⁵⁴ Gregory Hurtz and John Donovan conducted a meta-analysis specific to determining the correlation of the five factors of personality with various occupations and job performance. Hurtz and Dovovan believed previous meta-analyses did not accurately represent the five factors of personality as the available data did not observe the current five factor model of personality.¹⁵⁵ They hypothesised the true predictive capabilities of the Big Five were not correct.

¹⁵³ Mount and Barrick, *Five Reasons Why the "Big Five" Article has been Frequently Cited*, 851.

¹⁵⁴ Barrick, Mount and Judge, *Personality and Performance at the Beginning of the New Millennium: What do we Know and Where do we Go Next?*, 9.; Mount and Barrick, *Five Reasons Why the "Big Five" Article has been Frequently Cited*, 849-857.; Robert P. Tett and Neil D. Christiansen, "Personality Tests at the Crossroads: A Response to Morgeson, Campion, Dipboye, Hollenbeck, Murphy, and Schmitt (2007)," *Personnel Psychology* 60, no. 4 (Winter2007, 2007), 967-993, <http://search.ebscohost.com/login.aspx?direct=true&db=pbh&AN=27463323&site=ehost-live>.; Joanna Moutafi, Adrian Furnham and John Crump, "Is Managerial Level Related to Personality?" *British Journal of Management* 18, no. 3 (09, 2007), 272-280, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2007-12784-005&site=ehost-live>.; Gregory M. Hurtz and John J. Donovan, "Personality and Job Performance: The Big Five Revisited," *Journal of Applied Psychology* 85, no. 6 (2000), 869.

¹⁵⁵ *Ibid.*

The results from the Gregory Hertz and John Donovan meta-analysis revealed similar findings to those of Murray Barrick and Michael Mount. Conscientiousness was a valid predictor for all occupations, while extraversion and openness to experience demonstrated positive correlations for training performance. The remaining personality factors, occupational groups and job performance provided similarly low validities to the Barrick and Mount meta-analysis.¹⁵⁶

Gregory Hertz and John Donovan observed a true average validity of conscientiousness to predict job performance of 0.22; whereas, the initial Murray Barrick and Michael Mount meta-analysis produced an estimated true correlation of 0.23.¹⁵⁷ Interestingly, the Hertz and Donovan meta-analysis did not reveal validity between conscientiousness and training performance, opposing the results observed by Barrick and Mount.¹⁵⁸ Similar results to the Barrick and Mount meta-analysis for conscientiousness were observed across the range of occupations. People employed in sales demonstrated the highest correlation to conscientiousness with true validity of 0.26, while the correlation amongst skilled and unskilled employees provided a true validity of 0.15.¹⁵⁹ The validity spread of conscientiousness across the range of occupations was slightly greater in the Hertz and Donovan meta-analysis; however, the fundamental results were identical.

¹⁵⁶ *Ibid.*

¹⁵⁷ *Ibid.*

¹⁵⁸ *Ibid.*

¹⁵⁹ *Ibid.*

The factors of extraversion and openness to experience in the Gregory Hurtz and John Donovan meta-analysis demonstrated correlations to training performance as previously determined by the Murray Barrick and Michael Mount. Hurtz and Donovan recognized a true validity of 0.17 for extraversion to predict training performance compared to 0.26 realized in the Barrick and Mount meta-analysis.¹⁶⁰ Extraversion also revealed validities for the occupations of manager and sales, 0.12 and 0.15 respectively, congruent with the observations of Barrick and Mount.¹⁶¹ The true validity of the openness to experience documented by Hurtz and Donovan was also less than that observed by Barrick and Mount. In contrast, the meta-analysis conducted by Hurtz and Donovan produced significant validity, 0.18, between agreeableness and training performance; whereas, the Barrick and Mount found nil correlation.¹⁶²

The similarity of findings between the two independent meta-analyses verified and validated the capabilities of the five factor model of personality to predict future behaviour and job performance. Both meta-analyses demonstrated significant validity of conscientiousness across all occupations. Conscientiousness was prevalent from professionals to salespeople. The meta-analyses also determined the factor of conscientiousness was the greatest predictor of job performance. The predictive capabilities of extraversion and openness to experience were validated with training performance. People possessing facets of extraversion and openness to experience

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*

¹⁶² *Ibid.*

achieved surpassed peers in the training environment. Agreeableness and emotional stability did not provide any significant prediction of future behaviour.

Conclusion

This chapter examined the predictive validities of the five factor model of personalities. The results of the personality factor meta-analysis conducted by Murray Barrick and Michael Mount were discussed. The dimension of conscientiousness revealed significant correlation with all occupations, as well as correlations with job and training proficiency. In addition to conscientiousness, extraversion correlated with the occupations of manager and sales. The factor of extraversion also demonstrated correlations with job training proficiency, as did openness to experience. The Barrick and Mount meta-analysis did not provide any further correlations for extraversion and openness to experience. Correlations between the remaining factors, emotional stability and agreeableness, were insufficient to warrant predictive capabilities in overall job performance. In comparing the results of the Barrick and Mount meta-analysis with that of Gregory Hurtz and John Donovan, general consistencies were observed pertaining to the three predictors of performance; conscientiousness, extraversion and openness to experience. Conscientiousness was a valid factor of all occupations and job performance; however, in juxtaposition to Barrick and Mount, conscientiousness and training performance revealed insignificant validity. The validity of extraversion and openness to experience in the Hurtz and Donovan meta-analysis were similar to the correlations revealed by Barrick and Mount. However, in addition to extraversion and openness to

experience to predict training performance, agreeableness also demonstrated significant validity to predict training performance. Emotional stability was not a valid factor of any occupation, job performance or training performance. Overall, conscientiousness provides the greatest contribution to predicting the type of occupation and the general performance of an individual. Extraversion and openness to experience provide insight into specific occupations suitable for an individual and an expectation of training performance.

The predictive capabilities of the five factor model of personality, specifically conscientiousness, and to a lesser extent extraversion and openness to experience provide significant opportunities within the field of personnel selection. Personality testing targeting conscientiousness, extraversion and openness to experience could produce favourable results for all employers. The employment of personality testing by the Canadian Forces could provide significant insight into the personality of future recruits and influence the selection and ultimate retention of personnel with specific personalities.

Chapter 6 – Factors and Facets of the Canadian Forces

The current model of recruiting and selection for the Canadian Forces is focused on cognitive ability. As previously discussed, the initial and most basic predictive assessment method employed by the Canadian Forces is the Canadian Forces Aptitude Test. The use of the Canadian Forces Aptitude Test satisfies a dual requirement of the selection process by screening non-commissioned member and officer applicants and classifying successfully screened non-commissioned member applicants into applicable military occupations.¹⁶³ Using general cognitive ability cut-off scores for the overall screening of applicants and classification of non-commissioned member applicants, the Canadian Forces Aptitude Test objectively predicts the potential success of applicants to complete the initial phase of military occupation training.¹⁶⁴ Follow-on predictive assessments are conducted in the form of an academic and background assessment, structured interview and additional aptitude tests for a number of officer military occupations, to further determine the applicant's potential ability to complete initial military occupation training.¹⁶⁵ However, the overall focus remains on general mental ability to predict the applicant's potential ability to merely complete the primary stages of military occupation training.

¹⁶³ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

¹⁶⁴ *Ibid.*

¹⁶⁵ Girard, *Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria*

The emphasis of the Canadian Forces' recruiting and selection strategy is to ensure applicants possess the minimum potential ability, assessed from general mental ability, to only complete the initial phases of military occupation training is short-sighted. To achieve a successful recruiting, selection, promotion and retention strategy, the Canadian Forces would ideally incorporate an assessment or assessments to predict the long-term viability of an applicant for a career in the Canadian Forces.

This chapter examines the employment of personality testing by the Canadian Forces. First, the basis for introduction of personality testing to the Canadian Forces is discussed, specifically the long-term predictive assessment of personality testing. Second, the need to establish foundational personality traits for all military occupations is examined. Third, the immediate implementation of personality testing during the recruiting and selection process is discussed. Fourth, the synergistic effects of aggregating the predictive assessments from the Canadian Forces Aptitude Test and personality testing are considered.

The aim of the Canadian Forces recruiting and selection process focuses on ensuring recruits are capable of completing basic military occupation training.¹⁶⁶ Consequently, the current assessment methodologies employed by the Canadian Forces for recruiting and selection have failed to provide a prediction of the long-term viability of an applicant for a military career. To increase the effectiveness and efficiency of the recruiting, selection, promotion and retention of personnel, the Canadian Forces requires

¹⁶⁶ Syed, *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*

an assessment methodology capable of predicting beyond an applicant's current abilities.¹⁶⁷ The incorporation of the five factor model of personality testing into the recruiting and selection process would provide an assessment tool to predict an applicant's future abilities based on the personalities factors of extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience.

Meta-analyses of the five factor model of personality demonstrated the general predictive capabilities of a number of the factors. Specifically, conscientiousness was a general personality factor of all occupations and also predicted successful job performance. The factors of extraversion and openness to experience predicted successful training performance, while extraversion was also a personality factor of managers and salespeople. The remaining factors, emotional stability and agreeableness did not have significant predictive fundamentals. The meta-analyses provided an ideal basis for examining the key factors of personality, and quantified the broad personality factors relevant to classes of occupations and general performance criteria. The five personality factors are too broad to employ as an assessment tool.¹⁶⁸ Recall, the five factors of personality are the overarching datasets of the thousands of traits and facets of personality. In order to fully implement and establish personality testing within the Canadian Forces as a true predictor of the viability of an applicant, the personality traits and facets associated with each military occupation will need to be examined.

¹⁶⁷ Wendy A. Darr and Rob Morrow, *An Evaluation of a Competency-Based Approach to Canadian Forces Human Resources* (Ottawa: Director General Military Personnel Research and Analysis,[2008]).

¹⁶⁸ Barrick, Mount and Judge, *Personality and Performance at the Beginning of the New Millennium: What do we Know and Where do we Go Next?*, 9.

The five factor model of personality incorporated the thousands of personality traits and facets originally devised by Gordon Allport.¹⁶⁹ To achieve a truly predictive assessment of an applicant's personality, the Canadian Forces will need to determine the foundational personality traits of all military occupations. An analysis of each military occupation will reveal key facets and factors relevant to the overall success of a member in a specific military occupation.¹⁷⁰ In addition, a broad analysis will also determine the facets and factors prevalent at each rank level within the military occupation.

Current personality analysis within the Canadian Forces has focused on small sample groups of recruits on initial military occupation training.¹⁷¹ The subsequent personality findings have served only as datasets of the personality traits and factors of recruits on initial military occupation training. To fully appreciate the capabilities of personality testing, beyond the current focus on recruits and initial military occupation training, the Canadian Forces will need to conduct broad spectrum personality analysis.

The analytical personality tools in current development within the Canadian Forces, specifically the Trait Self Descriptive Inventory would provide a starting point for broad analysis.¹⁷² The employment of the Trait Self Descriptive Inventory to

¹⁶⁹ John, Angleitner and Ostendorf, *The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research*, 171-203.

¹⁷⁰ Fraser A. J. Boyes, "Personality as a Predictor of Military Performance and Counterproductive Behaviour" (Master of Science in Applied Psychology, Saint Mary's University), .

¹⁷¹ *Ibid.*

establish a foundation of personality facets and factors particular to each military occupation will achieve two aims. First, the personality facets and factors of the members of the Canadian Forces will be quantified beyond limited datasets of recruits on initial military occupation training. Personality testing of all currently serving members of the Canadian Forces will capture and categorize the spectrum of personality factors evident within the Canadian Forces and more importantly identify and quantify the factors characteristic to specific military occupations. Second, the Trait Self Descriptive Inventory will have a representative dataset for continued research and refinement. Current Trait Self Descriptive Inventory research within the Canadian Forces continues to search for the elusive combination of personality facets to provide an accurate assessment of personality for predictive future performance.¹⁷³ However, in order to truly understand the combination of personality facets that will provide the greatest prediction of future performance, one must have a characteristic personality dataset to emulate. Besides the benefits to further personality research, the establishment of a personality dataset for each rank level of all military occupations will enable effective and efficient personnel management spanning a member's career within the Canadian Forces.

While preparing to conduct a personality audit of the Canadian Forces to establish a comprehensive personality dataset, immediate incorporation of personality testing is feasible at the recruiting and selection level in conjunction with the current array of

¹⁷² Wendy Darr, *The Trait Self Descriptive (TSD) Inventory: A Facet-Level Examination* (Ottawa: Director General Military Personnel Research and Analysis,[2009]).

¹⁷³ *Ibid.*

predictive assessments. The employment of the Trait Self Descriptive Inventory during the recruiting and selection process would provide an assessment of each applicant's personality factors. A personality profile of each applicant could be established and used to the advantage of the Canadian Forces, and the selected applicants. As noted earlier, the meta-analyses determined the factor of conscientiousness was a predictor of job performance, whereas extraversion and openness to experience were predictors of training performance. Applicants assessed with weak factors of extraversion or openness to experience would be expected to have less success during training compared to those with strong extraversion and openness to experience factors. In addition, applicants with weak factors of extraversion and openness to experience would be expected to have marginal training performance.

To facilitate the successful training of recruits with low personality factors of extraversion and openness to experience, the Canadian Forces could modify instructional techniques, or more easily modify course member composition to ensure a distribution of extraversion and openness to experience. A course over-weighted with recruits assessed with low extraversion and low openness to experience would be expected to have a marginal rate of training success. The results of a course with marginal training success would not be limited to the failure of the recruits. The marginal training success of an entire course would have follow-on effects for administration, recruiting, training and ultimately operations of the Canadian Forces. A simple understanding of the personalities of the cohort would enable the Canadian Forces to manipulate course member composition to ensure training success and responsible allocation of training

resources. The recruit and the Canadian Forces benefit from the assessment of personality to predict training success. The limited implementation of personality testing at the recruiting and selection level would efficiently and effectively enhance the results of the current predictive assessments.

The implementation of the Trait Self Descriptive Inventory to assess personality, in conjunction with the Canadian Forces Aptitude Test to assess general mental ability has the potential to significantly impact the overall prediction of career performance.¹⁷⁴ As noted earlier, the Canadian Forces employs the Canadian Forces Aptitude Test to screen and select applicants with the necessary mental abilities to successfully complete the initial phase of military occupation training. The Canadian Forces predicts, using the applicant's general mental ability, whether the member has the ability to complete the initial phase of military occupation training. Based on the general mental ability, a ranking of the recruits likely to complete initial military occupation training, and hence continue with a career in the Canadian Forces, could be created. The recruit with the highest mental ability would be predicted to have the greatest ability to succeed in the Canadian Forces.

Using the same approach with the Trait Self Descriptive Inventory, an applicant's personality would be assessed to establish a prediction of career performance.

Employing the results of the personality meta-analyses, applicants possessing the

¹⁷⁴ Timothy A. Judge and others, "The Big Five Personality Traits, General Mental Ability, and Career Success Across the Life Span," *Personnel Psychology* 52, no. 3 (1999), 621-652, <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1999-11740-003&site=ehost-live>.

personality traits and facets of the conscientiousness factor would be predicted to have the will to achieve career success. The recruit predicted to have the greatest success in the Canadian Forces would be the most conscientious recruit.

Training success would also be predicted using the results of personality testing. The applicants demonstrating the traits and facets associated with the factors of extraversion and openness to experience would be anticipated to have the will to successfully complete training. Based on the factors of extraversion and openness to experience, a dual ranking of the recruits likely to successfully complete training could be created. The recruit possessing the strongest factors of extraversion and openness to experience would be predicted to have the greatest will to succeed in training.

The implementation of the Trait Self Descriptive Inventory, or a similar personality assessment, and the Canadian Forces Aptitude Test would provide a number of predictions pertaining to training performance and ultimately career performance. The utility of conducting the Canadian Forces Aptitude Test and the Trait Self Descriptive Inventory would not be the multiple singular predictions of career performance and training performance, rather the aggregate of the predictions would be most beneficial. Using only the Canadian Forces Aptitude Test, the recruit with the highest general mental ability would be ranked as the most likely to complete initial military occupation training. However, upon considering the results from the Trait Self Descriptive Inventory the same recruit possesses personality facets slightly opposite to conscientiousness, extraversion

and openness to experience. The recruit would therefore be ranked low for career performance and also ranked low for training performance based on personality.

The combination of the two tools, one to assess general mental ability and the other to assess personality, provided four hypothetical predictions of future performance. The Canadian Forces Aptitude Test provided one result for prediction, while the personality testing measured the five factors of personality enabling three predictions. Of the four possible predictions only one predicted success while the others predicted less than ideal results. The aggregate prediction of the hypothetical recruit would most likely be unfavourable. The true utility of the combination of personality and general mental ability testing would be the overall assessment attained from the aggregate predictions.

Conclusion

In summary, this chapter examined the employment of personality testing by the Canadian Forces for the purposes of recruiting, selection, advancement and retention. First, the basis for introduction of personality testing to the Canadian Forces was discussed. The current Canadian Forces predictive assessment tool, the Canadian Forces Aptitude Test provides a short-term prediction of the applicant's ability to successfully complete military occupation training. In order to achieve a similar prediction for long-term career success, in other words predicting advancement and retention, another assessment method is required. Second, the need to establish foundational personality traits for all military occupations was examined. To achieve long-term predictions of

career success the required and desired personality traits of military occupations will need to be determined. Third, the immediate implementation of personality testing during the recruiting and selection process was discussed. Instead of waiting to produce a personality trait dataset for each military occupation, the Canadian Forces could immediately implement personality testing during the recruiting process to assess the fundamental predictive factors of conscientiousness, extraversion and openness to experience. Fourth, the synergistic effects of aggregating the predictive assessments from the Canadian Forces Aptitude Test and personality testing were considered. By aggregating the predictive results from the Canadian Forces Aptitude Test and personality testing a more accurate assessment of the true performance of a recruit is possible. In addition, personality testing provides a number of predictive assessments while the Canadian Forces Aptitude Test provides a single prediction of ability to successfully complete initial military occupation training.

Chapter 7 – Conclusion

The focus of this paper was to analyze the predictive validity of personality testing to provide a long-term prediction of future performance in the context of the Canadian Forces. To achieve the aim this paper was compartmentalized into five distinct chapters to analyze the specifics of the personality, personality testing and the current predictive assessments employed by the Canadian Forces.

Chapter 2 focused on the history and evolution of the personality theories and testing. The contributions of Gordon Allport and H.S. Odbert to trait theory, specifically the amalgamation of nearly 18,000 personality traits set the stage for further advancements in field of personality testing. The evolution of personality testing from a single-dimension test in the early twentieth-century, two a suspect multi-dimensional test by the middle of the century highlighted the perceived usefulness of the predictive qualities. However, the acceptance and favourability of personality testing waned during the second-half of the twentieth-century until Murray Barrick and Michael Mount published their paper noting the predictive capabilities of personality testing.

Chapter 3 examined the tenets of the five factors of personality ascertained by Ernest Tupes and Raymond Christal to justify the taxonomy of Murray Barrick and Michael Mount. Specifically, the five factors of personality are: extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience.

Chapter 4 conducted a detailed analysis of the current predictive assessments methods employed by the Canadian Forces for recruiting and selection. The emphasis of the analysis focused on the predictive capabilities of the Canadian Forces Aptitude Test. During the analysis it was discovered that the Canadian Forces employs the results of the Canadian Forces Aptitude Test as a short-term prediction of an applicant's ability to complete initial military occupation training. No long-term predictive assessments were discovered.

Chapter 5 detailed the predictive validities of the five factor model of personalities. Overall, conscientiousness provides the greatest contribution to predicting the type of occupation and the general performance of an individual. Extraversion and openness to experience provide insight into specific occupations suitable for an individual and an expectation of training performance. Correlations between the remaining factors, emotional stability and agreeableness, were insufficient to warrant predictive capabilities in overall job performance.

Chapter 6 examined the employment of personality testing by the Canadian Forces for the purposes of recruiting, selection, advancement and retention. The following observations were noted.

First, the current Canadian Forces predictive assessment tool, the Canadian Forces Aptitude Test provides a short-term prediction of the applicant's ability to successfully complete military occupation training. In order to achieve a similar prediction for long-

term career success, in other words predicting advancement and retention, another assessment method is required.

Second, to achieve long-term predictions of career success the required and desired personality traits of military occupations will need to be determined.

Third, the immediate implementation of personality testing during the recruiting and selection should occur. Instead of waiting to produce a personality trait dataset for each military occupation, the Canadian Forces could immediately implement personality testing during the recruiting process to assess the fundamental predictive factors of conscientiousness, extraversion and openness to experience.

Fourth, synergistic effects of aggregating the predictive assessments from the Canadian Forces Aptitude Test and personality testing can be achieved. By aggregating the predictive results from the Canadian Forces Aptitude Test and personality testing a more accurate assessment of the true performance of a recruit is possible.

Fifth, personality testing provides a number of predictive assessments while the Canadian Forces Aptitude Test provides a single prediction of ability to successfully complete initial military occupation training.

Overall, the predictive capabilities of the five factor model of personality, specifically conscientiousness, and to a lesser extent extraversion and openness to

experience provide significant opportunities within the field of personnel selection.

Personality testing targeting conscientiousness, extraversion and personnel testing could produce favourable results for all employers. The employment of personality testing by the Canadian Forces could provide significant insight into the personality of future recruits and influence the selection and ultimate retention of personnel with specific personalities.

Bibliography

- Anderson, N. . *The Future of Selection and Assessment: Toward a Globalised Science and Practice*. Vol. 55: Taylor & Francis Ltd, 2003.
- Barrick, Murray R. and Michael K. Mount. "Antecedents of Involuntary Turnover due to a Reduction in Force." *Personnel Psychology* 47, no. 3 (09, 1994): 515-535.
- . "The Big Five Personality Dimensions and Job Performance: A Meta-Analysis." *Personnel Psychology* 44, no. 1 (Spring91, 1991): 1-26.
- . "Effects of Impression Management and Self-Deception on the Predictive Validity of Personality Constructs." *Journal of Applied Psychology* 81, no. 3 (06, 1996): 261-272.
- . "Yes, Personality Matters: Moving on to More Important Matters." *Human Performance* 18, no. 4 (10, 2005): 359-372.
- Barrick, Murray R., Michael K. Mount, and Timothy A. Judge. "Personality and Performance at the Beginning of the New Millennium: What do we Know and Where do we Go Next?" *International Journal of Selection & Assessment* 9, no. 1 (03, 2001): 9.
- Barrick, Murray R., Greg L. Stewart, and Mike Piotrowski. "Personality and Job Performance: Test of the Mediating Effects of Motivation among Sales Representatives." *Journal of Applied Psychology* 87, no. 1 (02, 2002): 43-51.
- Barrick, Murray R. and Ryan D. Zimmerman. "Reducing Voluntary, Avoidable Turnover through Selection." *Journal of Applied Psychology* 90, no. 1 (01, 2005): 159-166.
- Bartram, Dave and Anna Brown. "Information Exchange Article: Online Testing: Mode of Administration and the Stability of OPQ 32i Scores." *International Journal of Selection and Assessment* 12, no. 3 (09, 2004): 278-284.
- Benjafield, John G. "George Kelly: Cognitive Psychologist, Humanistic Psychologist, Or Something Else Entirely?" *History of Psychology* 11, no. 4 (11, 2008): 239-262.
- Bertua, Cristina, Neil Anderson, and Jesús F. Salgado. "The Predictive Validity of Cognitive Ability Tests: A UK Meta-Analysis." *Journal of Occupational & Organizational Psychology* 78, no. 3 (09, 2005): 387-409.
- . "The Predictive Validity of Cognitive Ability Tests: A UK Meta-Analysis." *Journal of Occupational & Organizational Psychology* 78, no. 3 (09, 2005): 387-409.

- . "The Predictive Validity of Cognitive Ability Tests: A UK Meta-Analysis." *Journal of Occupational & Organizational Psychology* 78, no. 3 (09, 2005): 387-409.
- Borg, Walter R. and Ernest C. Tupes. "Personality Characteristics Related to Leadership Behavior in Two Types of Small Group Situational Problems." *Journal of Applied Psychology* 42, no. 4 (08, 1958): 252-256.
- Bouton, Mark E. "Behaviourism, Thoughts, and Actions." *British Journal of Psychology* 100, no. 1 (04, 2009): 181-183.
- Boyes, Fraser A. J. "Personality as a Predictor of Military Performance and Counterproductive Behaviour." Master of Science in Applied Psychology, Saint Mary's University, 2005.
- Bozionelos, Nikos. "The Relationship between Disposition and Career Success: A British Study." *Journal of Occupational & Organizational Psychology* 77, no. 3 (09, 2004): 403-420.
- Bullard, Alice. "The Critical Impact of Frantz Fanon and Henri Collomb: Race, Gender, and Personality Testing of North and West Africans." *Journal of the History of the Behavioral Sciences* 41, no. 3 (2005): 225-248.
- Chief Military Personnel. "Canadian Forces Personnel Appraisal System (CFPAS)." National Defence and the Canadian Forces. <http://www.cmp-cpm.forces.gc.ca/cfpas-sepfc/index-eng.asp> (accessed 02/04, 2010).
- Christiansen, Neil D., Shaina Wolcott-Burnam, Jay E. Janovics, Gary N. Burns, and Stuart W. Quirk. "The Good Judge Revisited: Individual Differences in the Accuracy of Personality Judgments." *Human Performance* 18, no. 2 (04, 2005): 123-149.
- Costa, Paul T. and Robert R. McCrae. "Domains and Facets: Hierarchical Personality Assessment using the Revised NEO Personality Inventory." *Journal of Personality Assessment* 64, no. 1 (02, 1995): 21-50.
- Darr, Wendy. *The Trait Self Descriptive (TSD) Inventory: A Facet-Level Examination*. Ottawa: Director General Military Personnel Research and Analysis, 2009.
- Darr, Wendy A. and Rob Morrow. *An Evaluation of a Competency-Based Approach to Canadian Forces Human Resources*. Ottawa: Director General Military Personnel Research and Analysis, 2008.
- Digman, John M. "Five Robust Trait Dimensions: Development, Stability, and Utility." *Journal of Personality* 57, no. 2 (06, 1989): 195-214.

- . "Higher-Order Factors of the Big Five." *Journal of Personality and Social Psychology* 73, no. 6 (12, 1997): 1246-1256.
- . "Personality Structure: Emergence of the Five-Factor Model." *Annual Review of Psychology* 41, (1990): 417-440.
- Digman, John M. and Jillian Inouye. "Further Specification of the Five Robust Factors of Personality." *Journal of Personality and Social Psychology* 50, no. 1 (01, 1986): 116-123.
- Digman, John M. and Naomi Takemoto-Chock. "Factors in the Natural Language of Personality: Re-Analysis, Comparison, and Interpretation of Six Major Studies." *Multivariate Behavioral Research* 16, no. 2 (04, 1981): 149-170.
- Dunn, Wendy S., Michael K. Mount, Murray R. Barrick, and Deniz S. Ones. "Relative Importance of Personality and General Mental Ability in Managers' Judgments of Applicant Qualifications." *Journal of Applied Psychology* 80, no. 4 (08, 1995): 500-509.
- Eaves, Lindon and Hans Eysenck. "The Nature of Extraversion: A Genetical Analysis." *Journal of Personality and Social Psychology* 32, no. 1 (07, 1975): 102-112.
- Forbey, Johnathan D., Yossef Ben-Porath, and Diane Gartland. "Validation of the MMPI-2 Computerized Adaptive Version (MMPI-2-CA) in a Correctional Intake Facility." *Psychological Services* 6, no. 4 (11, 2009): 279-292.
- Germana, Joseph. "Maslow's Puzzle: A Reconfiguration." *Humanistic Psychologist* 35, no. 1 (01, 2007): 67-72.
- Gibby, Robert E. and Michael J. Zickar. "A History of the Early Days of Personality Testing in American Industry: An Obsession with Adjustment." *History of Psychology* 11, no. 3 (08, 2008): 164-184.
- Girard, Marcel. "Validation of the Canadian Forces Aptitude Test using QL3 RMS Clerk Training Criteria." Masters of Arts, University of Guelph, 2003.
- Goffin, Richard D. and Allison C. Boyd. "Faking and Personality Assessment in Personnel Selection: Advancing Models of Faking." *Canadian Psychology/Psychologie Canadienne* 50, no. 3 (08, 2009): 151-160.
- GOLDMAN, RICHARD. "Personality Testing." *Industrial Engineer: IE* 41, no. 9 (09, 2009): 41-45.
- Grünbaum, Adolf. "Is Sigmund Freud's Psychoanalytic Edifice Relevant to the 21st Century?" *Psychoanalytic Psychology* 23, no. 2 (Spr, 2006): 257-284.

- Guion, Robert M. "Changing Views for Personnel Selection Research." *Personnel Psychology* 40, no. 2 (1987): 199-213.
- . "Open a New Window: Validities and Values in Psychological Measurement." *American Psychologist* 29, no. 5 (05, 1974): 287-296.
- GUION, ROBERT M. "Personnel Selection." *Annual Review of Psychology* 18, (1967): 191-216.
- Guion, Robert M. and Wade M. Gibson. "Personnel Selection and Placement." *Annual Review of Psychology* 39, (1988): 349-374.
- Guion, Robert M. and Richard F. Gottier. "Validity of Personality Measures in Personnel Selection." *Personnel Psychology* 18, no. 2 (1965): 135-164.
- Guion, Robert M. and H. G. Osburn. "Review of 'Industrial Psychology: Its Theoretical and Social Foundations'." *Professional Psychology* 1, no. 2 (1970): 193-196.
- HOUGH, LEAETTA M. and FREDERICK L. OSWALD. "Personality Testing and Industrial–Organizational Psychology: Reflections, Progress, and Prospects." *Industrial & Organizational Psychology* 1, no. 3 (09, 2008): 272-290.
- Hough, Leaetta M. and Frederick L. Oswald. "They'Re Right, Well... mostly Right: Research Evidence and an Agenda to Rescue Personality Testing from 1960s Insights." *Human Performance* 18, no. 4 (2005): 373-387.
- Hurtz, Gregory M. and John J. Donovan. "Personality and Job Performance: The Big Five Revisited." *Journal of Applied Psychology* 85, no. 6 (2000): 869.
- John, Oliver P., Alois Angleitner, and Fritz Ostendorf. "The Lexical Approach to Personality: A Historical Review of Trait Taxonomic Research." *European Journal of Personality* 2, no. 3 (09, 1988): 171-203.
- Judge, Timothy A. and Chad A. Higgins. "The Big Five Personality Traits, General Mental Ability, and Career Success Across the Life Span." *Personnel Psychology* 52, no. 3 (09, 1999): 621-652.
- Judge, Timothy A., Chad A. Higgins, Carl J. Thoresen, and Murray R. Barrick. "The Big Five Personalitiy Traits, General Mental Ability, and Career Success Across the Life Span." *Personnel Psychology* 52, no. 3 (1999): 621-652.
- Komar, Shawn, Douglas J. Brown, Jennifer A. Komar, and Chet Robie. "Faking and the Validity of Conscientiousness: A Monte Carlo Investigation." *Journal of Applied Psychology* 93, no. 1 (01, 2008): 140-154.

- Lanning, Kevin. "Traits, Trait Words, and the Explanation of Behavior." *Theoretical & Philosophical Psychology* 6, no. 2 (Fal, 1986): 108-111.
- Laurence, Janice H. and Peter F. Ramsberger. *Low-Aptitude Men in the Military: Who Profits, Who Pays?*. New York: Praeger Publishers, 1991.
- Levine, Abraham S. and Ernest C. Tupes. "Postwar Research in Pilot Selection and Classification." *Journal of Applied Psychology* 36, no. 3 (06, 1952): 157-160.
- Lombardo, Giovanni Pietro and Renato Foschi. "The European Origins of 'Personality Psychology'." *European Psychologist* 7, no. 2 (06, 2002): 134-145.
- Mount, Michael K. and Murray R. Barrick. "Five Reasons Why the "Big Five" Article has been Frequently Cited." *Personnel Psychology* 51, no. 4 (Winter98, 1998): 849-857.
- Mount, Michael K., Murray R. Barrick, Steve M. Scullen, James Rounds, and Paul Sackett. "Higher-Order Dimensions of the Big Five Personality Traits and the Big Six Vocational Interest Types." *Personnel Psychology* 58, no. 2 (Summer2005, 2005): 447-478.
- Mount, Michael K., Murray R. Barrick, and J. P. Strauss. "Validity of Observer Ratings of the Big Five Personality Factors." *Journal of Applied Psychology* 79, no. 2 (04, 1994): 272-280.
- Mount, Michael K., L. A. Witt, and Murray R. Barrick. "Incremental Validity of Empirically Keyed Biodata Scales Over Gma and the Five Factor Personality Constructs." *Personnel Psychology* 53, no. 2 (Summer2000, 2000): 299-323.
- Moutafi, Joanna, Adrian Furnham, and John Crump. "Is Managerial Level Related to Personality?" *British Journal of Management* 18, no. 3 (09, 2007): 272-280.
- Nicholson, Ian A. M. "Gordon Allport, Character, and the "Culture of Personality," 1897–1937." *History of Psychology* 1, no. 1 (02, 1998): 52-68.
- Ones, Deniz S., Michael K. Mount, Murray R. Barrick, and John E. Hunter. "Personality and Job Performance: A Critique of the Tett, Jackson, and Rothstein (1991) Meta-Analysis." *Personnel Psychology* 47, no. 1 (Spring94, 1994): 147-156.
- Piotrowski, Chris and Terry Armstrong. "Current Recruitment and Selection Practices: A National Survey of Fortune 1000 Firms." *North American Journal of Psychology* 8, no. 3 (12, 2006): 489-496.
- Raymark, Patrick H., Mark J. Schmit, and Robert M. Guion. "Identifying Potentially Useful Personality Constructs for Employee Selection." *Personnel Psychology* 50, no. 3 (1997): 723-736.

- Salgado, Jesus F. and Silvia Moscoso. "Comprehensive Meta-Analysis of the Construct Validity of the Employment Interview." *European Journal of Work & Organizational Psychology* 11, no. 3 (09, 2002): 299-324.
- Salgado, Jesús F. and Silvia Moscoso. "Internet-Based Personality Testing: Equivalence of Measures and Assessee's Perceptions and Reactions." *International Journal of Selection and Assessment* 11, no. 2-3 (06, 2003): 194-205.
- Schmidt, Frank L., Jonathan A. Shaffer, and In-Sue Oh. "Increased Accuracy for Range Restriction Corrections: Implications for the Role of Personality and General Mental Ability in Job and Training Performance." *Personnel Psychology* 61, no. 4 (Winter2008, 2008): 827-868.
- Scholtz, D. C. *Validation of the CFAT and Establishment of Cutoff Scores for Steward Selection*. Ottawa: Director Human Resources Research and Evaluation, 2004.
- Scott, Mark David. "Personnel Selection Methods within the Framework of Reinforcement Sensitivity." *International Journal of Business Research* 9, no. 7 (11, 2009): 138-146.
- Scroggins, Wesley A., Steven L. Thomas, and Jerry A. Morris. "Psychological Testing in Personnel Selection, Part III: The Resurgence of Personality Testing." *Public Personnel Management* 38, no. 1 (Spring2009, 2009): 67-77.
- Syed, F. *Canadian Forces Aptitude Test (CFAT): Reassessment of Norms*. Ottawa: Director Human Resources Research and Evaluation, 2004.
- Tett, Robert P. and Neil D. Christiansen. "Personality Tests at the Crossroads: A Response to Morgeson, Campion, Dipboye, Hollenbeck, Murphy, and Schmitt (2007)." *Personnel Psychology* 60, no. 4 (Winter2007, 2007): 967-993.
- Tett, Robert P., Douglas N. Jackson, Mitchell Rothstein, and John R. Reddon. "Meta-Analysis of Bidirectional Relations in Personality-Job Performance Research." *Human Performance* 12, no. 1 (01, 1999): 1.
- Tupes, Ernest C. and Raymond E. Christal. "Recurrent Personality Factors Based on Trait Ratings." *Journal of Personality* 60, no. 2 (06, 1992): 225-251.
- Watson, John B. *Behaviorism*. New York: W.W. Norton & Company, 1970.
- Zalenski, Robert J. and Richard Raspa. "Maslow's Hierarchy of Needs: A Framework for Achieving Human Potential in Hospice." *Journal of Palliative Medicine* 9, no. 5 (10, 2006): 1120-1127.