Concurrent Validity Study of the Conditional Reasoning Test - Workplace Psychopathy: Subclinical Psychopathy, Integrity, Workplace Deviance, and other Professional Outcomes in the Canadian Military

by

Keith Joy

A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
in Partial Fulfillment of the Requirements for
the Degree of Master of Science in Applied Psychology –
(Industrial/Organizational)

July, 2022, Halifax, Nova Scotia

Approved by: Dr. Nicolas Roulin
Supervisor

Approved by: Dr. Debra Gilin
Internal Examiner

Approved by: Dr. Kevin Kelloway
Internal Examiner

Approved by: Dr. Damian O'Keefe
External Examiner

Date: July 12, 2022

Abstract

Concurrent Validity Study of the Conditional Reasoning Test - Workplace Psychopathy: Subclinical Psychopathy, Integrity, Workplace Deviance, and other Professional Outcomes in the Canadian Military

by Keith Joy

A concurrent validity study was conducted using the Conditional Reasoning Test for Workplace Psychopathy (CRT-WP), with a sample of military members within the Canadian Armed Forces (CAF). The CRT-WP is a newly developed implicit measure of subclinical psychopathy which has shown resistance to impression management (Cook & Roulin, 2021). Higher levels of psychopathy in the workplace have been associated with adverse outcomes such as toxic leadership, bullying, negative employee wellbeing as well as many other harmful consequences (Boddy, 2014). The criteria that were assessed against the CRT-WP were integrity (via personality factors), counterproductive work behaviour, transformational leadership and organizational citizenship behaviour.

The CRT-WP was found to relate with personality and behavioural factors relevant to integrity which were in line with tendencies typically observed in those higher in psychopathy. It was also able to predict acts of counterproductive work behaviour and abuse. It should be noted that all observed significant relationships achieved small effect sizes. Most notably the CRT-WP displayed incremental validity over integrity measures being investigated within the Canadian Military, in assessing workplace deviance and abuse and was deemed to be important in predicting abusive workplace behaviours. The results of this study give more support for the CRT-WP's viability in selection settings as this implicit measure has shown promise to predict abusive acts, conduct associated with many detrimental impacts for employees.

July 12, 2022

Contents

Introduction

When an individual is high in the dark personality trait of psychopathy, they are typically impulsive, lack a moral compass, exhibit self-serving ruthless tendencies, and are anti-social (Hare et al., 1991). Historically, the primary focus of research on psychopathy has been improving the detection methods of forensically diagnosable psychopaths, to limit the impact of their maladaptive behaviour in general society (Hare, 1994). However, more recently, the study of subclinical levels of psychopathy has experienced a sharp increase due to its pronounced influence within employment settings (Boddy, 2010; Schütte et al., 2018). Employees with increased levels of subclinical psychopathy have been shown to be attracted to the power and prestige of senior leadership positions and have been associated with incidents of toxic leadership, bullying, interpersonal conflict, negative employee wellbeing as well as many other severely detrimental consequences (Babiak & Hare, 2019; Boddy, 2014). As a result, employers have become increasingly interested in assessing psychopathy within their applicants, aiming to reduce the adverse impacts in their workplaces (Mathieu & Babiak, 2016). Unfortunately, the majority of existing self-report explicit measures of psychopathy have displayed some limitations because they are easier to fake, or their content may not be suitable for use in applicant assessment settings (Hart et al., 1995; Lilienfeld & Fowler, 2006).

A personality assessment that may assist with the evaluation of applicant subclinical psychopathy, comes from the conditional reasoning framework established by James (1998). Conditional reasoning tests (CRTs) are a type of implicit personality measurement, or a means to evaluate the mental processes and behavioural influences that are not accessible through introspection (James, 1998). Particularly, CRTs explore an individual's justification mechanisms (JMs), which are reasoning processes or biases used to substantiate a particular behaviour,

attitudinal tendency, or personality trait. When this motivation is exercised, people exhibit bias to give support to the decisions that influence their actions. James posited that because people differ in the behaviour that they favour, it is possible to evaluate dispositional tendencies by assessing personal justification mechanisms. During a conditional reasoning test, test-takers respond to scenario-based logic problems. For each logic problem, individuals are asked to select a response to satisfy the situation from a series of provided options, masking the true criterion of the measure. Conditional reasoning theory assumes that test-takers will select the "logical" response which best reflects their dominant dispositional tendencies, thus tapping into their implicit personality. Conditional reasoning tests not only have achieved empirical standards to assess various constructs and criteria but also have shown an ability to address some of the limitations exhibited by explicit personality measures as they have displayed a resistance to impression management and socially desirable responding (Lebreton et al., 2020).

Building on James' (1998) CRT framework, the Conditional Reasoning Test of Workplace Psychopathy (CRT-WP) was created (Cook & Roulin, 2021). The CRT-WP assesses one's implicit psychopathic behavioural tendencies. This newly developed measure has achieved empirically sufficient levels of internal consistency, displayed convergent validity with other measures of subclinical psychopathy, and presented an ability to predict relevant workplace outcomes while also showing a resistance to faking (Cook & Roulin, 2021). However, to date, the studies that have indicated the promise of the CRT-WP have not included a sample population of employees within an operational organization. Though the current research findings of the CRT-WP are encouraging, they would require replication within a functional workplace setting before it could be considered for use in employee screening. Working jointly with the Canadian Armed Forces (CAF), this study aimed to address this gap in knowledge.

The CAF is an organization which is responsible to protect the nation of Canada, its population, as well as its allies when operating internationally (DND, 2003). As the CAF has the duty to uphold national security, its military members are expected to exercise sound ethics in their everyday duties (DND, 2020). In recent years the CAF has been involved in many public cases of wrongdoing, including allegations of sexual misconduct, substance abuse and other acts that have shown a pattern of poor moral judgement (Brewster, 2021). As such, the CAF have been actively pursuing selection tools that are able to detect individuals who are unsuitable for military service, due to problematic conduct or beliefs (Darr, 2019). Given the empirical promise of the CRT-WP, this study was conducted to determine if the measure could achieve sufficient levels of predictive validity of relevant performance outcomes (positive and negative) in those who serve in the Canadian Military.

The focus of this research was to conduct a concurrent validity study with the CRT-WP using a sample population of non-commissioned members serving in the Royal Canadian Air Force (RCAF). In consultation with the Canadian Military, it was requested that this research commence within the RCAF and for it to involve junior ranking service personnel. Even though senior officers have been implicated in public incidents of misconduct, examples of unacceptable behaviour have also been observed across all ranks and commands of the organization, making this research relevant at every level of the CAF (Burke & Brewster, 2021). The study evaluated resultant CRT-WP scores and how they related to levels of integrity (via personality factors), counterproductive work behaviour (CWB), transformational leadership and organizational citizenship behaviour (OCB). Participants completed the CRT-WP as well as self-report measures evaluating personality factors relevant to integrity (Big Five, cautiousness, irresponsibility) and CWB, whereas their respective supervisors provided evaluations on

subordinate acts of CWB, transformational leadership and OCB. Given that those higher in psychopathy tend to display conduct that is more reckless, self-serving, and insensitive, and are generally less reliable, dependable, and honest (Hare, 1994; Ones, 1993; Schütte et al., 2018), it was hypothesized that CRT-WP scores would correlate positively with irresponsibility and workplace deviance but negatively with cautiousness, transformational leadership, organizational citizenship behaviour and a second order personality factor (Big Five) assessing integrity. Broadly, this study intended to increase the understanding of the CRT-WP's criterion validity, so that it may be considered for use in employee selection settings.

Workplace Psychopathy

Over the past twenty years, considerable effort has been exerted to evaluate the effects of specific adverse personality traits in the workplace (Landay et al., 2019; O'Boyle et al. 2012). Much of this focus has concentrated on the personality factors of Machiavellianism, narcissism and psychopathy, or the Dark Triad as coined by Paulhus and Williams (2002). In their seminal work, Paulhus and Williams described a set of related, yet empirically distinct, destructive personality traits associated with socially aberrant behaviours. Though these personality traits are linked to clinically diagnosable personality disorders, the emphasis of a resounding amount of research conducted in employment settings has involved subclinical levels of these attributes (Babiak & Hare, 2019; Blickle & Schütte, 2017; Cohen, 2016; Landay et al., 2019; Mathieu et al., 2014; Schilback et al., 2020). Evaluating the impacts of employees possessing subclinical levels of these traits has become of increasing importance given the extremely negative impacts they can cause within an organization (Boddy, 2014; O'Boyle et al., 2012; Schütte et al., 2018; Webster & Smith, 2019). This type of research has become a greater priority in recent years

because individuals with subclinical levels of these harmful traits have shown a keen ability to not only function but excel in certain workplace settings (Babiak & Hare, 2019; Boddy, 2010).

Building on the extant evidence demonstrating the negative behaviours associated with Dark Triad personality traits (O'Boyle et al., 2012), a more concerted level of research has emerged with the goal to better comprehend the destructive impacts of subclinical psychopathy (Boddy, 2014; Mathieu & Babiak, 2016; Schütte et al., 2018). Subclinical psychopathy, as it relates to employment settings, is typically referred to as corporate or workplace psychopathy, but terms such as industrial, organizational, successful, and executive psychopathy have also been used in the literature (Boddy, 2010). For clarity, the terms corporate and workplace psychopathy will be used synonymously to describe this concept throughout this research.

The realization that individuals higher in psychopathy had the capacity to successfully function in society and industry was respectively presented in the work of Hare (1994) and Babiak (1995), showing that these people may be more difficult to detect than those identified via forensic (clinical) assessments. Relating to this topic, Babiak and Hare (2019) studied those employees within the corporate sector who exhibited higher levels of psychopathy and were enticed by the elevated degrees of wealth, status, power, and authority attainable by those achieving positions of senior leadership in business. From a personality perspective, it has been argued that psychopathy exists on a continuum such that individuals can possess low, moderate, or high levels of the trait (Lilienfeld & Fowler, 2006). Individuals on the psychopathy spectrum may be best distinguished by the frequency and degree to which they carry out particular deviant behaviours (Lebreton et al., 2006). From a behavioural standpoint, those demonstrating increased levels of psychopathy, tend to perform more frequent acts of impulsivity, dishonesty, insensitivity, heightened risk, social dominance, arrogance, and selfishness (Checkley, 1941:

Hare, 1994; Paulhus & Williams, 2002). Moreover, these individuals often show lower levels of fear and anxiety, as well as an inability to accept responsibility for their actions or foster meaningful interpersonal relationships compared with the normal population (Boddy, 2006).

Many of these behavioural and personality tendencies, signify a number of the factors and facets that have been used to represent subclinical psychopathy within various measures. For instance, the Psychopathy Checklist Revised (PCL-R; Hare, 1980), a forensic measure adapted for non-clinical use, consists of two factors. The first factor is comprised of interpersonally deviant acts of selfishness, remorselessness, manipulation whereas the second describes tendencies of instability (impulsivity) and social deviance. Related to remorselessness, individuals high in psychopathy have also been assessed on the facet of blame externalization, a tendency to not accept responsibility for personal wrongdoings and condemn others or outward factors for outcomes inside one's control (Sandler, 1987). Lilienfeld and colleagues (2005) further developed the Psychopathic Personality Inventory (PPI-R), to integrate two factors: i) fearless dominance which is related to displays of fearlessness and stress-immunity and ii) self-centered impulsivity which is represented by more maladaptive acts of callousness and selfishness. Similar to the PPI-R, the Triarchic Psychopathy Measure (TriPM; Patrick, 2010) incorporates boldness (fearlessness) and meanness (callousness) but also includes disinhibition, a trait comprised of more consistent acts of deviance and non-conformity. Though these models vary in how they assess subclinical psychopathy, many evaluate very similar tendencies to capture this dark construct.

There have also been notable developments in the clinical field evaluating personality disorders which suggest that particular antisocial conditions, may be in many ways, just extreme variations of otherwise normal behaviour (Schütte et al., 2018). Additionally, based on the idea

that psychopathy scales a continuum, there is growing evidence that employees higher in psychopathy exist in the workplace to a greater extent than forensic psychopaths do within society (Schütte et al., 2018). In research conducted by Lebreton and colleagues (2006), they suggested that up to 10% of individuals exhibit psychopathic tendencies to a moderate level, well exceeding the one percent of the population who are classified as clinical psychopaths.

Relating to the atypical behaviours commonly demonstrated by those higher in psychopathy, much work has been done to assess how the presence of these individuals impacts the workplace (Cohen, 2016; Mathieu et al., 2014; Schütte et al., 2018). As will be detailed in later sections, elevated levels of psychopathy in the workplace have been associated with increased acts of counterproductive work behaviour and toxic leadership, which significantly impact the health and well-being of employees through incidences of physical, verbal, and emotional harm (Boddy, 2014; Mathieu et al., 2014; Mathieu & Babiak, 2015). Generally, counterproductive work behaviour is understood as deliberate acts by employees to harm the workplace or individuals associated with it (Robinson & Bennett, 1995). While the literature supports that these deviant types of behaviour are most often targeted at fellow workers, there is also evidence showing the negative relationship between the presence of workplace psychopathy with productivity, efficient functioning, retention of talent and general success of organizations (Boddy, 2006, 2010; Gruys & Sackett, 2003; Mathieu & Babiak, 2016).

Employees higher in psychopathy have also been shown to engage in fewer actions that benefit their employer (Spain et al., 2013; Szabó et al., 2018; Webster & Smith, 2019). A study completed by Webster and Smith found that those higher in psychopathy were less likely to perform organizational citizenship behaviour, which is conduct outside the normal duties of one's work that contribute to an organization, than individuals possessing heightened levels of

either Machiavellianism or narcissism (Organ, 1997). Workers higher in psychopathy have also demonstrated lower levels of integrity within the workplace, given their propensity to be less accountable, reliable, dependable, and honest (Murphy, 1993; Ones, 1993; Schütte et al., 2018). These behavioural tendencies of employees possessing subclinical levels of psychopathy show that their presence not only has the potential to negatively impact their workplace due to their deliberate harmful actions, but also do so because of their lack of desire to complete tasks or emulate professional behaviour to benefit the company. Though a more thorough explanation of the respective links between corporate psychopathy with integrity, counterproductive work behaviour, leadership, and organizational citizenship behaviour will be provided, it is clear that the presence of these individuals is associated with detrimental outcomes for employers.

However, many of the measures that have been adapted to assess subclinical levels of psychopathy are susceptible to faking and socially desirable responding (Cook & Roulin, 2021; Fisher et al., 2018), which are forms of inaccurate reporting that adversely influence the reliability and validity of provided data (Burns & Christiansen, 2011; Kuncel & Tellegen, 2009). These limitations are not restricted to measures of psychopathy as they have also influenced scales that assess the Five Factor Model of personality and integrity (among others), constructs that are also heavily assessed in employment settings (Lilienfeld et al., 1995). Given the unfavourable impacts increased levels of psychopathy can have on the workplace, selection tools which can assess this dark personality trait and are resistant against impression management need to be pursued, highlighting the necessity for the current research.

Conditional Reasoning

Problems with Explicit Self-Report Measures: Faking and Socially Desirable Responding

During the last 25 years, many psychologists studying selection and assessment, have noticed a revival in the use of self-report measures to evaluate various factors of individual personality and other relevant constructs (Donovan et al., 2014; Oswald and Hough, 2008). It has been suggested that this resurgence could be associated with the criterion validity that self-report measures have shown in predicting performance in a multitude of employment sectors and incremental validity in selecting viable applicants, over and above cognitive ability and assessment centre evaluations (Donovan et al., 2014; Goffin et al., 1996; Hurtz & Donovan, 2000; Mchenry et al., 1990). However, even though self-report measures have shown utility in employee screening, the accuracy of these data has received a substantial amount of investigation and scrutiny based on the impacts of test-taker influence and bias (Ellingson et al., 2001; Ones et al., 1996; Ones & Viswesvaran, 1998). Much of this scrutiny has related to the concept of impression management, through acts of faking and socially desirable responding, which have been shown to adversely affect the level of precision of provided data (Hough & Oswald, 2008).

Socially desirable responding can be understood as "the tendency to give positive-self descriptions" (Paulhus, 2002, p. 49). In providing these types of responses as a part of employee selection, individuals tend to carry out acts of faking, or distorting their responses, as a way to make themselves more appealing to the evaluating body to increase their chances of selection (Donovan et al., 2014). Even though there has been some debate as to the degree this type of reporting distorts observed scores (Ellingson et al., 2001; Ones & Viswesvaran, 1998), Morgensen and colleagues (2007) demonstrated that selection decisions based on faked data have a higher likelihood to result in hiring employees who display lower levels of performance,

decreased person-job fit, and more frequent acts of workplace deviance, than those who do not fake. This problem can be magnified when explicit self-report measures, which consist of overt items, are used to assess negative factors such as CWB because they may be more easily identified and manipulated (Fine & Gottlieb-Litvin, 2013). An item is said to be overt when a respondent "immediately understands what the item is intended to measure" (Vidotto et al., 2018, p. 2). When items can be manipulated, an observed score has the potential to be distorted as much as a full standard deviation from a true score (Alliger & Dwight, 2000). Using explicit self-report measures to evaluate dark personality factors, such as psychopathy, could further exacerbate faking behaviours because individuals who exhibit these tendencies are more likely to lie, deceive and manipulate in the pursuit of personal gain (Kelley et al., 2018; Kelsey, 2016).

Due to the potential unfavorable impacts related to increased levels of psychopathy and CWB, organizations should attempt to use selection techniques which increase accuracy (reduce bias) of their screening processes so that they can appropriately detect and avoid these negative traits and outcomes from their employment settings. As conditional reasoning tests have shown an ability to combat the negative influences of impression management, this form of assessment could offer some utility in increasing the accuracy of information provided by applicants in situations of assessment and selection.

Conditional Reasoning Overview

In a personnel selection context, a considerable portion of measures that are used to evaluate personality factors are based on self-reporting, which require respondents to answer questions regarding their own needs, motives, values, and traits (Donovan et al., 2014). This assessment approach taps into aspects of explicit personality which pertain to "the dynamic mental structures and processes that influence an individual's behaviour adjustments to his or her

own environment that are accessible via introspection" (James & Lebreton, 2012, p. 4). For this method of analysis to be effective, a researcher must in part rely on an individual's ability to reflect on the aspects of their personality of which they are aware (Bornstein, 2002). However, in addition to relying on a participant's ability to reflect, explicit measures can also be subject to increased levels of social desirability bias and other forms of impression management (Morgensen et al., 2007).

Another means of measuring personality is to focus primarily on the implicit aspects of a construct. Contrary to the explicit component, implicit personality involves the mental processes and behavioural influences that are not accessible through introspection (James, 1998). Despite evidence showing that implicit personality assessment can provide incremental validity over explicit measures when evaluating the same trait (Perugini et al., 2010), this method of investigation is challenging as implicit aspects of personality cannot be accessed via social observation or personal disclosure (Greenwald & Farnham, 2000). As such, researchers who have been interested in implicit personality have relied on indirect measures, such as projective or response latency tests. Projective tests are designed to evaluate the manner in which individuals react to particular stimuli (i.e. picture cards) whereas latent response tests allow assessors to make inferences regarding the reaction time a person displays in responding to a provocation (James & Lebreton, 2012). These, among other forms of implicit measure, are not without their own limitations, as resultant analysis is extremely time consuming and the collected data has the potential to be influenced by forms of external bias and error inadvertently imposed by the test evaluator (Beer & Watson, 2008; Murphy, 1989).

As a part of his seminal work, James (1998) proposed a new indirect method of personality evaluation to address several of the limitations exhibited by extant implicit and

explicit measures. Under the framework of conditional reasoning, James developed a method of personality assessment that explored the ways people justified their day-to-day behaviour, through justification mechanisms, to reiterate, which are reasoning processes or biases used to substantiate a particular behaviour (or tendency) (James, 1998). James explained that people generally are motivated to believe that their behaviour is justifiably rational, or more critically, not irrational. Since people exhibit bias to give support to the decisions that influence their actions (hence conditional reasoning), James believed it would be possible to use this method to evaluate personal dispositional tendencies through assessing their justification mechanisms.

Conditional Reasoning Tests

In order to evaluate justification mechanisms, a Conditional Reasoning Test (CRT) methodology was developed which utilized logic-based problems to facilitate the implicit personality assessment. Representing a particular JM, each CRT problem presents test-takers with a specific scenario and a series of response options (James & Lebreton, 2012). Individuals are directed to review the scenario as well as the provided response options and select the answer they consider to be the most logical to satisfy the question/situation. It was believed that test-takers would select the "logical" response which best reflected their most dominant dispositional tendencies. Participants are not informed of the true criterion of the assessment and are under the impression that they are being evaluated on their reasoning ability. This type of assessment does not seem out of place in a selection environment, as reasoning ability has been connected to the performance of various positions which allows face validity to be achieved (James et al., 2004).

As will be represented in a provided example, each CRT scenario-based question consists of a set of four response options separated into two categories: i) two responses which can successfully satisfy the logic problem and ii) two responses that can not satisfy the logic

problem, and therefore are easily identifiable as incorrect (James & Lebreton, 2012). Once an

individual disregards the two incorrect options, they are left to select between two dichotomous

responses: i) one related to the criterion (i.e. aggressive tendency) and ii) one that is opposite to

the criterion (i.e. non-aggressive tendency). James' (1998) conditional reasoning theory suggests

that an individual is more likely to select the option that best reflects their dominant underlying

personality constructs as the response will seem the most logical to them.

The following conditional reasoning problem to evaluate aggression, which was

developed by James et al. (2004, p. 276), clearly displays how response options are to be

separated:

> The old saying, "an eye for an eye," means that if someone hurts you, then you should
> hurt that person back. If you are hit, then you should hit back. If someone burns your
> house, then you should burn that person's house.
>
> Which of the following is the biggest problem with the "eye for an eye" plan?
>
> a) It tells people to "turn the other cheek".
> b) It offers no way to settle a conflict in a friendly manner.
> c) It can only be used at certain times of the year.
> d) People have to wait until they are attacked before they can strike.

James et al. (2004) designed the CRT for aggression (CRT-A) based on the premise that,

it is possible to infer whether an individual has a stronger disposition to harm others than to

behave non-aggressively by assessing whether (or not) they judge reasoning in line with pro-

social norms as less (or more) logical. In this example, options (a) and (c) are the incorrect or

illogical responses as the scenario explains a situation opposite to what (a) is inferring and makes

no reference to the impact of time of year, excluding (c). This leaves test-takers to select between

options (b – non-aggressive) and (d - aggressive), which could satisfy the logic problem to an

equal degree. Supporting conditional reasoning theory, individuals who have a more dominant

aggressive personality would be more likely to select option (d), whereas those who are less-

aggression dominant would be more prone to choose option (b) as the most logical response (James et al., 2004). Over a complete conditional reasoning test, such as the CRT-A, a test-taker responds to numerous scenarios and receives +1 point for every response related to the criterion, -1 point for every response opposite to the criterion, and zero points for each illogical response that was selected. The total number of test items are summed to give an aggregate score which represents how an individual measures in an implicit trait, in the case of the CRT-A, aggression.

Benefits of Conditional Reasoning Tests

Even though CRTs are a relatively new form of personality assessment, they have been able to address some of the limitations associated with implicit and explicit measures (Berry et al., 2010; Lebreton et al., 2020). Related to the negative impacts of impression management linked to explicit self-report measures of personality, CRTs have shown an ability to be resistant to socially desirable responding and faking (Lebreton et al., 2020). These tests are especially resistant to faking when test-takers do not understand the true methodology utilized with CRTs and have also been robust when individuals are directed to "fake-good" or to try harder to find the "correct answer" (Wiita et al., 2020). However, there is evidence to suggest that when participants understand the underlying framework of how CRTs evaluate their criterion, they are more vulnerable to becoming inefficient measures of implicit personality (Lebreton et al., 2020). Nevertheless, as long as test-takers are under the impression they are completing a logic or reasoning ability test, CRTs uphold satisfactory psychometric properties of reliability and validity (James & Lebreton, 2012).

Conditional reasoning tests have also been successful in addressing issues related to test administrator error and the excessive time required to analyze test results for implicit measures. Given that an empirically validated standardized scoring key is developed for each CRT, the

influence of the test administrator and the time required to evaluate the results have been both

significantly reduced, compared with other implicit assessments (Berry et al., 2010).

Aside from the established construct validity of respective CRTs (James, 1998; James et

al., 2004), these implicit measures of personality have also displayed predictive validity of other

relevant outcomes. In a meta-analysis conducted by Berry and colleagues (2010), the CRT-A

demonstrated a significant positive relationship with counterproductive work behaviour ($r = .16$).

This relationship was also supported by Galić (2016) who found the CRT-A was a significant

predictor of CWB-related attitudes and self-reported deviant workplace behaviours. Similar

results were found in a CRT developed by Fine and Gottlieb-Litvin (2013) to assess integrity.

Their measure, CRIT, was again successful in predicting CWBs, and observed significant

relationships with self-reported ($r = -.26$) and observer-reported ($r = -.25$) work deviance.

Utilizing the CRT-A to evaluate team outcomes, implicit aggression (aggregated – group level)

unfavourably impacted group performance, commitment, and cohesion through its influence on

negative social emotional behaviours (adverse reactions to task discussion, i.e. rejecting others'

opinions or suggestions) (Baysinger et al., 2014; Ridgeway & Johnson, 1990). In research

investigating levels of achievement motivation in participants, a CRT assessing this construct

was shown to display incremental validity over self-report measures in predicting other relevant

outcomes, such as performance and exerted effort (Bing et al., 2007).

Notwithstanding that the research evaluating the utility of CRTs is still evolving as it is a

comparatively new approach to implicit personality measurement, there is growing evidence that

these assessments have the ability to predict outcomes relevant to employee selection (Lebreton

et al., 2020). Collective evidence suggests that CRTs could provide a method of personality

measurement as a part of personnel selection, that is more resistant to faking, less susceptible to

evaluator error and requires less time to administer and analyze. With these potential benefits in mind, subsequent work should be completed to both develop further conditional reasoning tests as well as to increase the understanding of the predictive validity of existing CRTs.

Conditional Reasoning Test – Workplace Psychopathy

Based on the theory established by James (1998), Cook and Roulin (2021) developed a conditional reasoning test to assess various justification mechanisms associated with workplace psychopathy. The justification mechanisms (or facets) of psychopathy included in the measure are carefree impulsivity, fearlessness, ruthless self-interest, insensitivity, social superiority, and externalization. From the research which generated the CRT-WP, the descriptions of the included justification mechanisms are presented in Table 1. As a means of assessing implicit personality, the CRT-WP evaluates these JMs via 22 items comprised in two factors of psychopathic tendencies: individual-oriented (self) and other-oriented. The individual-oriented factor includes the JMs of carefree impulsivity, fearlessness, whereas the other-oriented factor incorporates ruthless self-interest and insensitivity. Both factors contain items related to social superiority and externalization but differ based on the context of how each is presented.

Congruent with the fundamental principles of conditional reasoning test theory, test-takers complete the CRT-WP with the understanding that the assessment is evaluating their reasoning ability (Cook & Roulin, 2021; James & Lebreton, 2012). Similar to the scoring criteria of other CRTs, over the 22 items participants receive +1 for each anti-social response (criterion), -1 for each pro-social response (opposite to the criterion) and 0 for each illogical response. As a result, cumulative raw scores can range from -22 to +22 respectively. It should be noted that individuals who respond with $\geq$ 25% illogical response choices are removed in accordance with the test guidelines provided by James and Lebreton (2012).

Table 1

List and Descriptions of the Justification Mechanisms Assessed within the CRT-WP

Name	Description
1. Carefree Impulsivity (Three items)	A predisposition for actions and decisions to be guided by impulsivity instead of reasoning, deliberation, or long-term planning. The unconscious excitement that spontaneity gives to the individual results in actions based on nothing other than a momentary impulse. Actions may often seem to have a disregard for socially accepted norms and behaviours, as most others give the time and thought to consider these things before acting.
2. Fearlessness (Three items)	An inclination and preference for high-risk behaviours along with a high tolerance/resilience for the uncertainty in potential outcomes. This is accompanied by an abnormal disregard for, and lack of, fear or anxiety that most people experience in high-risk or high-stress situations. This is different from carefree impulsivity in that individuals high on fearlessness are making high-risk choices even after deliberation, because they genuinely find them more attractive.
3. Ruthless Self-Interest (Six items)	The tendency to actively seek out opportunities for self-promotion with complete disregard for anyone or anything other than the self. The individual strives to achieve their own goals and advancement at any cost, and will find a way to justify exploitation and other behaviours that negatively effect others as a result. There is a survival-of-the-fittest mentality.
4. Insensitivity (Three items)	A disinclination to feel concern, guilt, remorse, or give any consideration to the feelings of others. This is a complete lack of empathy in any situation. This differs from ruthless personal gain in that this insensitivity is present even in situations where there is nothing to gain for the individual.
5. Social Superiority (Four items)	A persisting belief that one's social status and social skills are superior to generally everyone around them. The individual will believe that they can charm and persuade others in any situation. The individual also believes that he/she is a dominant, alpha social personality that should be considered above others.
6. Externalization (Three items)	A propensity to blame other people or external factors for negative occurrences. This bias appears as a "global irresponsibility" for actions and outcomes that clearly resulted from choices under the control of the individual. Individuals with this bias will deflect blame and absolve themselves of any wrongdoings.

Note. JM descriptions provided from Cook and Roulin (2021), p. 55. Descriptions established based on the stance that a degree of overlap within JMs is acceptable, a viewpoint supported in the CRTs developed by both James et al. (2004) and Scheon et al. (2018).

After numerous administrations of various CRTs, James and Lebreton advise of this cut-off

percentage because they assessed those who select a multitude of illogical options likely have

significant difficulty with the language of administration or exercise careless responding

(Lebreton et al., 2020). In their experience, less than 5% of test takers exceed the illogical

response cut-off percentage, therefore a substantial portion of any sample population should not be excluded for this reason (Lebreton et al., 2020).

As a part of the test development process of the CRT-WP, Cook and Roulin (2021) have demonstrated that the measure has achieved empirically sufficient levels of test-retest reliability ($r = .73$) and internal consistency ($\alpha = .82$) as well as construct validity in that it has been positively correlated with subclinical assessments of psychopathy: i) SRP-III – no criminal tendencies: $r = .23$ (Paulhus et al., 2012) and ii) Short Dark Triad: $r = .33$ (Jones & Paulhus, 2014). It should be noted that these small effect sizes are consistent with similar research that has been completed to develop other CRTs. In the validation of CRTs designed to assess aggression, relative-motive-strength and creative personality respectively, correlations assessing the construct validity of those measures also resulted in small effect sizes (James & Lebreton, 2012).

Nevertheless, it is reasonable to argue that assessing psychopathy with a CRT could be challenging, from an empirical support point of view. This criticism is understandable because psychopathy is a dark personality trait that even at moderate levels is only present within 10% of general society (Lebreton et al., 2006). This issue is compounded as CRTs have historically displayed small effect sizes of construct and criterion validities (Lebreton et al., 2020). James and Lebreton (2012) explore this critique as it relates to another construct, aggression, which is also extremely harmful but rarely seen in workplace settings. They contest that to successfully evaluate constructs which demonstrate low base rates in the normal population, one must attempt to assess less extreme forms of the behaviour (motives) in order to make the prediction of these traits more feasible. For example, instead of attempting to evaluate aggression via acts of severe harm (i.e. violent assault), one should aim to assess less violent or indirect aggressive (but still harmful) tendencies (i.e. spreading rumours, deliberate tardiness), that are present in greater

frequency. Investigating these less severe dispositions on a cumulative basis, makes it more likely to detect detrimental traits that are not as readily seen. This type of approach is utilized within the CRT-WP. As detailed in Table 1, the CRT-WP measures six justification mechanisms that are related to higher levels of psychopathy. Yet, it could be quite normal to observe the presence of each justification mechanism to some degree (i.e. fearlessness) in any pro-social individual. That said, if test-takers exhibit higher degrees of multiple JMs, a stronger case could be made that they possess higher levels of the maladaptive trait, which would in turn maximize the construct or criterion validities that result (attempting to address the smaller correlations seen in previous CRT research). This methodology is also consistent with the view that individuals can possess low, moderate, or high levels of psychopathy (Lilienfeld & Fowler, 2006) and that a respective level can be illustrated by the frequency and degree to which they carry out (or exhibit) specific deviant behaviours (or motives) (Lebreton et al., 2006).

In supplementary research evaluating its susceptibility to faking, the CRT-WP was assessed against explicit self-report measures of personality, integrity and dark personality in a study that utilized an honest versus selection-scenario set of conditions. It was hypothesized that participants would be able to "fake good" to artificially inflate their scores in a positive manner when submitted to the selection condition with the explicit self report measures, but not via the CRT-WP. The results showed that individuals were able to favourably inflate their scores across all measures with the exception of the CRT-WP, where there was no significant difference in scores between the honest and selection condition (Cook & Roulin, 2021). This provided support for the CRT-WP's ability to assess subclinical psychopathy without being adversely influenced by deliberate acts of faking. The findings of this study also gave insight into the measure's predictive validity in that the CRT-WP exhibited significant negative relationships with the TSD

Integrity Scale ($r = -.25$) and the Honesty-Humility factor within the HEXACO model of

personality ($r = -.24$), which has been shown to have incremental validity over the FFM in

assessing integrity (Catano et al., 2018; Lee & Ashton, 2004).

Given these findings, the CRT-WP presents promise as an implicit measure of subclinical

psychopathy which has the ability to predict outcomes relevant to the workplace while also

showing rigour against impression management. In order to better understand it's potential utility

in employment selection settings, further research must be conducted to determine if it has the

capability to predict other important criterion related to effective performance in organizational

settings, hence the need for the current study.

Criteria Included in Concurrent Validity Study

Numerous studies have demonstrated the association between increased psychopathy and

adverse workplace outcomes such as toxic leadership, bullying, conflict, negative employee

wellbeing as well as other harmful impacts (Boddy, 2014). However, research has not been

conducted to determine if the CRT-WP has the ability to predict such relevant criteria in a

functional organization. This information could be of importance because if the CRT-WP

exhibited the ability to predict pertinent workplace behaviours in active employees of an

organization, that are not being screened for via the assessment process which has selected these

individuals (or to a greater degree), then integrating the subclinical psychopathy measure could

help improve the employer's current selection system. To address this gap in knowledge, this

study will evaluate the CRT-WP's criterion validity to predict integrity (via personality),

counterproductive work behaviour, transformational leadership, and organizational citizenship

behaviour within a sample population of serving CAF members. To provide further context, the

literature explaining the respective relationships between psychopathy and the included criteria is provided below. Further procedural details of this study will be given in later sections.

Workplace Psychopathy, Personality and Integrity

When Paulhus and Williams (2002) presented the "Dark Triad", amongst other outcomes, they evaluated how each construct of narcissism, Machiavellianism and psychopathy related to the Big Five personality traits. Pertaining to this current research, it was found that individuals higher in psychopathy displayed decreased levels of Conscientiousness ($r = -.24$), Agreeableness ($r = -.25$) but increased degrees of Emotional Stability ($r = .34$), Extraversion ($r = .34$) and Openness ($r = .24$). Lee and Ashton (2005) built on this research to explore how the aspects of the Dark Triad would further relate to the Big Five (BFI) and their measure of personality, the HEXACO. It was demonstrated that psychopathy negatively correlated with Conscientiousness (BFI: $r = -.19$, HEXACO: $r = -.18$) and Agreeableness (BFI: $r = -.39$, HEXACO: $r = -.15$) via both BFI and HEXACO measures of personality, and Emotionality (i.e. self-assured, stable) ($r = -.29$) within the HEXACO model**.** Of interest, the resultant correlation between psychopathy and the HEXACO factor of Emotionality (E), somewhat contradict the Paulhus and Williams (2002) finding between psychopathy and Emotional Stability (ES). However, Emotional Stability and Emotionality are similar but separate constructs as E also incorporates a sentimentality scale which assesses a tendency to foster strong interpersonal emotional bonds, which is behaviour opposite to what would be expected of those higher in psychopathy (Boddy, 2006; Lee & Ashton, 2005). The Lee and Ashton (2005) correlations were significant yet weak, however the strongest relationships that were observed in this research were between psychopathy and the HEXACO personality factor (and supporting facets) of Honesty-Humility. Psychopathy negatively correlated with Honesty-Humility ($r = -.72$) along with its facets of Fairness ($r = -$

.75), Sincerity ($r = $ -.57), Greed Avoidance ($r = $ -.49) and Modesty ($r = $ -.62) (Lee & Ashton, 2005).

The small correlational effect sizes between psychopathy and Conscientiousness, Agreeableness, and Emotional Stability respectively should not detract from the possible importance of these associations. In a meta-analysis conducted by Berry and colleagues (2007), it was found that counterproductive work behaviour had the highest significant correlations with Conscientiousness, Agreeableness and Emotional Stability. They observed that Conscientiousness ($r = $ -.34) had the strongest relationship with organizational CWB while Agreeableness ($r = $ -.25) had the second strongest correlation with this type of behaviour. Regarding interpersonal CWB, similar relationships were observed with both Conscientiousness ($r = $ -.19) and Agreeableness ($r = $ -.36). Emotional Stability displayed the smallest collective correlations with organizational ($r = $ -.19) and interpersonal ($r = $ -.20) CWB but were still significantly related to acts of workplace deviance (Berry et al., 2007). Individually, Conscientiousness has also been an extremely important, arguably the most important, predictor of pertinent employee behaviours as this personality factor has been related to job performance (Barrick et al., 2001), job satisfaction (Judge et al., 2002), and job success (Smithikrai, 2007).

Integrity is multifaceted and can be defined in many ways. The Oxford Companion to Philosophy defines integrity as:

> The quality of a person who can be counted upon to give precedence to moral considerations, even when there is a strong inducement to let self-interest or some clamant desire override them, or where the betrayal or moral principle may pass undetected. To have integrity is to have unconditional and steady commitment to moral values and obligations. (Honderich, 1995, p. 410)

In considering selection for employment, Sackett and Wanek (1997) explained integrity as being encompassed by trustworthiness, dependability, conscientiousness, reliability, and honesty. Murphy (1993) detailed that individuals' behaviour in the workplace is guided by their respective definitions of good or bad, acceptable or unacceptable behaviour vice some overarching ethical theory.

Many studies have explored the viability of evaluating integrity via the assessment of individual personality traits. Ones (1993) conducted a study to establish the relationship between the FFM of personality and the construct of integrity. A composite integrity score was created from data collected from students and job applicants on seven integrity measures. The integrity composite was found to have the strongest correlations with Conscientiousness ($r = .85$), Agreeableness ($r = .53$) and Emotional Stability ($r = .46$) (Ones, 1993).

Measures based on the FFM have been used to assess integrity, via assessing job performance and deviant behaviour in the workplace. When personality factors were being used to assess integrity (through acts of work deviance), Ones and Viswesvaran (2001) produced high validities with the factors of Conscientiousness ($r = .47$) and Emotional Stability ($r = .39$) compared to other assessments (i.e. integrity tests) ($r = .32$). Wanek et al. (2003) research further examined the relationship between integrity and personality. They found that Big Five factors had the strongest relationship with the socialization component of integrity tests, more specifically they observed that Conscientiousness was negatively associated with antisocial behaviour, including past deviant behaviours of drug/alcohol/gun use, theft, driving violations and other issues related to social conformity and thrill-seeking behaviours.

Building on the evidence that particular personality factors, such as Conscientiousness, Agreeableness and to a lesser extent, Emotional Stability, have shown effectiveness in predicting

integrity and workplace deviance, strengthens the importance of how psychopathy relates to these constructs. Individuals higher in psychopathy have shown a tendency to display lower levels of Conscientiousness, Agreeableness and Emotional Stability (Paulhus & Williams, 2002). With this information in mind, one could deduce that employees higher in psychopathy would be more likely to demonstrate decreased integrity, heightened deviance, as well as other acts of social nonconformity based on their typical personality profile. Considering the relationships exhibited between psychopathy, the Big Five, and personality factors associated with integrity, the first three hypotheses of the study are proposed:

H1: A significant negative correlation will result between levels of participant psychopathy and integrity, as assessed by the personality factors of Conscientiousness, Agreeableness and Emotional Stability via the Trait Self Descriptive – Integrity Scale (Catano et al., 2018).

H2: A significant negative correlation will result between levels of participant psychopathy and cautiousness, as assessed by the Cautiousness Scale (facet of Conscientiousness) (Darr, 2019). Note, the Cautiousness scale is based on the conscientiousness construct within the International Personality Item Pool (IPIP; Goldberg et al., 2006; Darr, 2019).

H3: A significant positive correlation will result between levels of participant psychopathy and irresponsibility, as assessed by the Irresponsibility Scale (facet of Disinhibition (impulsivity)) (Darr, 2019).

Workplace Psychopathy and Counterproductive Work Behaviour

Counterproductive work behaviour (CWB) is defined as "voluntary behaviour that violates significant organizational norms and in doing so threatens the well-being of an

organization, its members or both" (Robinson & Bennett, 1995, p. 556). Robinson and Bennett

classify CWB in terms of the target (of harm) as well as the severity of an action, broadly

separating it into two distinct groups: interpersonal and organizational. To elaborate,

interpersonal workplace deviance is intended to harm the subordinates, colleagues, supervisors,

or clients associated with the workplace, and is carried out through various acts of aggression

and violence, such as assault (physical, verbal, sexual), harassment (verbal, sexual,

psychological), deceit, and bullying or other forms of intimidation (Gruys & Sackett, 2003;

Robinson & Bennett, 1995). In contrast, organizational workplace deviance is exemplified by

behaviours that are intended to harm a company's assets, productivity and overall wellbeing

(Gruys & Sackett, 2003; Robinson & Bennett, 1995). This kind of aberration is exhibited

through, but not limited to, acts of theft, property damage, production sabotage, risky behaviour

(i.e. drug and alcohol use), absenteeism, and rule breaking (Gruys & Sackett, 2003).

The presence of CWB can have pervasive and detrimental effects for employee health

and welfare as well as for the bottom line of an organization. In terms of affective and attitudinal

outcomes, employees experiencing interpersonal workplace deviance have shown decreased

levels of job satisfaction, commitment and motivation which have led to increased intentions to

quit and turnover (Boddy, 2014; Nielsen & Einarson, 2012). Victims of employee centric CWB

have suffered from negative personal wellbeing effects such as significant mental (depression,

anxiety) and physical health (somatic) issues, and elevated amounts of stress, burnout and strain

(Nielsen & Einarson, 2012). Considering these negative consequences, taking actions to

minimize the impact of counterproductive work behaviour should be a priority for employers.

In a study evaluating the Dark Triad of personality, O'Boyle and colleagues (2012)

conducted a meta-analysis which evaluated the relationship between subclinical psychopathy and

counterproductive work behavior. Assessing over 245 independent studies, O'Boyle et al.

demonstrated a significant positive relationship between psychopathy and deviant workplace

behavior. Though this relationship resulted in a small effect size ($r = .06$), the authors

acknowledged that the majority of the analyzed studies contained employees working in

authoritative positions, such as police officers, military personnel, and prison guards, and thus

the results may not be as generalizable than if the research included a more diverse population.

To further explain the smaller than expected association, they posited that potentially individuals

employed in positions of authority conducted fewer deviant acts or those who are higher in

psychopathy and work in positions of power, may be better able not to act on their impulsive

urges as frequently, as those employed in non-authoritative occupations (O'Boyle et al., 2012).

A much clearer relationship between psychopathy and workplace deviance was

established in research including a substantial sample of employees from a broad range of

occupations (Schütte et al., 2018). This study aimed to evaluate the relationship of interpersonal

workplace deviance with psychopathy at the trait and facet levels of the construct. The resultant

significant positive correlation between psychopathy and interpersonal workplace deviance ($r =$

.23) demonstrated a larger effect size than the O'Boyle et al. (2012) meta-analysis. This research

by Schütte and colleagues also exhibited respective significant positive relationships between

psychopathy facets such as, self-centred impulsivity ($r = .29$), blame externalization ($r = .24$)

and rebellious non-conformity ($r = .22$) with personnel-centric counterproductive work

behaviour. An association between self-centered impulsivity and counterproductive work

behaviour was also found by Blickle and Schütte (2017). In a study investigating the influence of

trait psychopathy on task performance and workplace deviance, it was demonstrated that a

significant positive relationship existed between self-centered impulsivity and organizational

counterproductive work behaviour ($r = .34$). This research showed that self-centered impulsivity related to harmful effects for the organization, in addition to the interpersonal negative impacts later discovered by Schütte et al. (2018).

Neo and colleagues (2018) further evaluated specific facets of psychopathy, utilizing the Triarchic Psychopathy Model which consists of boldness (ability to remain calm in stressful situations), disinhibition (impulsivity) and meanness (insensitivity, deceitfulness). After collecting data from 510 adults throughout the United States on such outcomes as influence tactics, ethical decision making, leadership approach and CWB, once again a significant positive relationship was found between facets of psychopathy and workplace deviance as well as other undesirable conduct. In this study, workplace deviance was assessed via the acts of sabotage, withdrawal, production deviance, theft, and abuse. Notwithstanding that boldness was related to some constructive workplace behaviours such as adaptive leadership (transformational and transactional), teamplay and softer forms of influence, disinhibition positively predicted CWB ($\beta = .58$) whereas meanness positively predicted hard influence tactics (use of threats) ($\beta = .51$) and negatively predicted ethical decision making ($\beta = -.61$), when respectively controlling for everything else in the model (Neo et al., 2018).

Boddy (2010, 2014) has also shown a clear link between the presence of employees who are higher in psychopathy and increased levels of interpersonal conflict, bullying and other forms of CWB. However, Boddy (2014) demonstrated how levels of psychopathy in managers influenced the deviant behaviour of their employees. When individuals worked for a manager with increased psychopathic behaviours, they were more likely to take part in harmful acts against the organization ($r = .29$) and be more involved in interpersonal conflict ($r = .50$), in

proposed retaliation for how they were treated, thus showing some of the indirect effects this dark personality trait can have on the workplace.

In addition to the research presented above, subsequent studies have displayed the significant relationship between corporate psychopathy and more frequent incidences of aggressiveness, verbal attacks, substantial losses of financial resources and productivity among other negative outcomes (Cheang & Appelbaum, 2013; Cohen, 2016; Landay et al., 2019; Mathieu et al., 2014; Mathieu & Babiak, 2016). In line with these findings, there appears to be a substantial and growing amount of evidence in the literature linking the presence of psychopathy with various types of counterproductive work behaviour in employment settings.

Given the collective evidence demonstrating the association between psychopathy and workplace deviance, the fourth and fifth hypotheses are proposed:

H4: A significant positive correlation will result between levels of participant psychopathy and self-reported acts of counterproductive work behaviour.

H5: A significant positive correlation will result between levels of participant psychopathy and acts of counterproductive work behaviour demonstrated by the participant, as rated by their respective supervisor.

Workplace Psychopathy and Leadership

When considering factors which relate to the health and effectiveness of an organization, there are very few that receive as much attention as leadership (Lord et al., 2017). Within the literature, a considerable amount of research has evaluated how different leadership approaches impact employee performance and well-being (Nielsen et al., 2008; Wang et al., 2011). Many of these studies incorporate the Full-Range Model of leadership and assess how the varied styles of transformational, transactional, and passive leadership respectively influence employee

behaviour and affect (Avolio & Bass, 2004). Of these leadership styles, transformational leadership has achieved the most empirical support for being associated with highly desirable outcomes for employees and organizations alike (Arnold et al., 2007; Lim & Ployart, 2004). Transformational leadership was first introduced by Burns (1978), and described a leadership style that was represented by four specific leadership behaviours: i) individualized consideration (personal attention given to employees to foster their development), ii) intellectual stimulation (encouraging employees to exhibit creativity when solving problems), iii) inspirational motivation (exhibiting confidence while communicating expectations of high performance), and iv) idealized influence (demonstrating role model behaviours through a high level of moral character and achievement) (Mathieu et al., 2015).

As proposed by Bass (1985), transformational leadership has the potential to positively influence behaviour by fostering higher levels of motivation, performance and development by inspiring individuals on a personal level. Unlike transactional leadership which relies on a compensation or reward-based model to impact behaviour, transformational leadership encourages followers to be less driven by their own self-interest and more focused on how their actions can impact the 'greater good' of a situation (Bass, 1985). Transformational leadership highlights the intrinsic value of effort, vice the finite or tactile individual benefits often associated with transactional leadership (Lord et al., 2017).

A meta-analysis completed by Wang and colleagues (2011) explored the relationship between transformational leadership and performance across various types of criteria and organizational levels. Evaluating 117 independent samples, this study displayed a positive link between transformational leadership and personal, team, and organizational performance, with greater effect sizes being observed in contextual over task performance for individuals. This

research also showed that transformational leadership explained incremental variance for individual performance, over and above the influence achieved by transactional leadership.

Pertaining to well-being outcomes and affect, transformational leadership has also been associated with higher levels of organizational commitment, psychological well-being, job satisfaction as well as lower levels of stress, burnout, and other personal health challenges (Arnold et al., 2007; Lim & Ployart, 2004; Nielsen et al., 2008). In light of the scientifically exhibited advantages of transformational leadership, it would stand to reason that organizations would benefit from a higher propensity of this leadership style within their employees.

Despite the presence of well-documented cases where employees higher in psychopathy have achieved influential and prestigious positions of senior leadership (Babiak & Hare, 2019), numerous studies have shown that individuals higher in psychopathy tend to be poor leaders, based on various workplace outcomes (Boddy, 2006, 2010, 2014; Mathieu et al., 2014; Mathieu & Babiak, 2015). Those higher in psychopathy have a greater predisposition to be more self-centered, insensitive, impulsive, and less empathetic, supportive and dependable (Hare & Neumann, 2008). As opposed to transformational leadership which focuses on inspiring actions that benefit the collective, workers higher in psychopathy exercise more passive leadership (less-involved, laissez-faire) than positive leadership behaviours (Mathieu et al., 2015). Given that those higher in psychopathy are more concerned with how situations will benefit themselves, they have been shown to display less behaviours that focus on developing their staff and corresponding teams (Boddy, 2017). Particularly, managers higher in psychopathy have exhibited a tendency to avoid including their subordinates when making decisions and provide less personal attention to promote worker development (Westerlaken & Woods, 2013).

Research has also demonstrated that managers higher in psychopathy go beyond just being unengaged leaders, to those who cause significant employee harm. In a study conducted by Boddy (2014), who has made sizable contributions to the corporate psychopathy literature, it was revealed that the presence of these individuals was related to significantly higher levels of interpersonal conflict, bullying and deviance directed at their employees. Exposed to such a toxic work environment, employees within the study displayed amplified adverse well-being outcomes, as they felt more angry, anxious, and depressed when under the leadership of an individual of increased psychopathy.

The issue still remains that employees higher in psychopathy have displayed an ability to manipulate the impressions of their own supervisors, guiding decision-makers to believe they are more effective than they truly are (Babiak & Hare, 2019). This could be in large part due to increased scores of charisma, presentation style and communication that have resulted in both subordinate and supervisor observer-report ratings (Babiak et al., 2010). However, when assessing all behaviours that relate to transformational or effective leadership and objective measures of performance, there is a clear relationship between increased psychopathy and leadership ineffectiveness. Based on the empirical support linking psychopathy with decreased transformational leadership behaviour, the sixth hypothesis is proposed:

H6: A significant negative correlation will result between levels of participant psychopathy and acts of transformational leadership behaviour demonstrated by the participant, as rated by their respective supervisor.

Workplace Psychopathy and Organizational Citizenship Behaviour

Building on the work of Katz (1964) who explored the factors contributing to employee commitment to their individual goals and employer, Organ developed the concept of

organizational citizenship behaviour (Bateman & Organ, 1983; Organ 1988). Organizational

citizenship behaviour (OCB) is defined as "individual behaviour that is discretionary, not

directly or explicitly recognized by the formal reward system, and that in the aggregate promotes

the effective functioning of the organization" (Organ, 1988, p. 4). Also known as contextual

performance behaviours, acts of this kind are distinct from the formal duties of one's

employment, as they are not contractually obligated, and are often demonstrated on a volunteer

basis (Allen et al., 2000; Catano et al., 2016). Examples of organizational citizenship behaviour

include requesting additional assignments, staying past specified working hours to complete

tasks, attending non-mandatory meetings, helping colleagues with their work, providing informal

training, and participating in extra-curricular committees, etc (Organ, 1990).

In some of the fundamental work on the topic, OCBs were explained to be akin to the

"lubricant for the social machinery" of a company, given that these acts tend to benefit both the

individuals within the organization and the establishment as a whole (Szabó et al., 2018, p. 352).

Similar to Robinson and Bennet's (1995) structure of CWB, Williams and Anderson (1991)

posited that OCBs can be differentiated by the target (of benefit) of the behaviour. In this sense,

acts that are intended to benefit a colleague are considered interpersonal (OCB-I) whereas

behaviours that are aimed to benefit the company are classified as organizational (OCB-O)

(Williams & Anderson, 1991).

Podsakoff and colleagues (2009) facilitated the first research which used a meta-analytic

approach to explain the relationship between OCB and their outcomes. Examining a total of 168

studies, including $N = 51,235$ participants, the results demonstrated a noteworthy number of

individual (interpersonal) and organizational level advantageous outcomes. Further explaining

the employee-level benefits, individuals who exhibited increased levels of OCB, had elevated job

performance ratings, were considered more often in reward allocation decisions as well as displayed lower degrees of absenteeism, turnover intentions, and turnover. Leading to various organizational level benefits, increased OCBs were also positively associated with unit-level performance, productivity, efficiency, profitability, and negatively related to expenditures, and unit-level turnover (correlations ranging from small to medium).

Contrasting the wealth of work evaluating the associations between personality factors within the Dark Triad and negative employment outcomes, Spain and colleagues (2014) assessed if such traits would relate to positive workplace behaviour (OCB). Pertaining to citizenship behaviour, it was found that employees displaying high levels of subclinical psychopathy, demonstrated lower levels of corporate social responsibility and general decreased support for their employees, in and outside of their core duties (Spain et al., 2014). Webster and Smith (2019) supported these findings and provided a possible explanation for why employees higher in psychopathy show reduced concern and support for their colleagues and carry out less OCB in general. The authors suggested that because these individuals are more prone to behaviours exhibiting self-centered impulsivity, social superiority and insensitivity, they would likely not be motivated or understand why they should conduct acts that are intended to benefit others, and more importantly, do not benefit themselves.

Given that OCBs are discretionary acts that fall outside tasks for which they are paid, it is reasonable to expect that those higher in psychopathy would not see any basis to partake in them as they do not result in a personal advantage (Webster & Smith, 2019). The results of their study supported their theory as psychopathy displayed the largest negative correlation with OCB ($r = -.24$), than the other dark personality traits.

Szabó and colleagues (2018) took the psychopathy and OCB analysis a step further, to assess if the dark personality trait would influence interpersonal (OCB-I) and organizational (OCB-O) pro-social tasks to a varied degree, while controlling for dispositional, situational, and demographic factors. Based on an assessed lack of completed research, the authors only offered a hypothesis for the relationship between organizational OCB and psychopathy, and anticipated a negative relationship based on an observed adverse influence of self-centered impulsivity with contextual performance in a study completed by Schütte et al. (2018). No hypothesis was provided for psychopathy and OCB-I. A population of 256 Hungarian full-time employees displayed a predictive negative relationship with both forms of OCB showing that those with higher levels of psychopathy tended to complete less interpersonal and organizational discretionary work tasks. Expanding on their own research, Szabó and colleagues (2021) investigated whether the Dark Triad model of personality was a more effective predictor of work outcomes than the HEXACO personality framework, developed by Lee and Ashton (2004). Though dark personality factors were not better predictors than the HEXACO in this study, a negative relationship was found between OCBs and psychopathy ($r = -.30$) demonstrating that the associations found in this study were in line with those observed in previous research.

In comparing the number of studies aimed to assess the relationship between workplace psychopathy and counterproductive work behaviour, the literature evaluating the link between this dark personality trait and organizational citizenship behaviour seems to be more limited. That said, the research that has been done in this area is consistent in their collective findings and increasing in frequency. After reviewing the literature, there appears to be a relationship between subclinical psychopathy and OCB, therefore further supporting the additional negative impact on the workplace when this anti-social personality trait is present.

As such, based on the relationships found between organizational citizenship behaviour and psychopathy in the presented studies, the seventh and final hypothesis is proposed:

H7: A significant negative correlation will result between levels of participant psychopathy and acts of organizational citizenship behaviour demonstrated by the participant, as rated by their respective supervisor.

The Canadian Armed Forces

Requirement for High Standards of Conduct in the Canadian Armed Forces

As stated in the Department of National Defence and the Canadian Forces Code of Values and Ethics (2020), members of the Canadian Military share a duty for the defence of Canada, its people, and its parliamentary democracy. Every member of the CAF is an employee of the Federal Government of Canada, while serving as a part of domestic or international military missions. As public service employees, members of the Canadian Military should expect to have their service and conduct heavily scrutinized as they are accountable to elected governmental officials and the Canadian taxpayer (DND, 2020). In considering operations conducted internationally, poor judgement or inappropriate behavior of a military member could have significant national security and diplomatic consequences for the country (DND, 2020).

Military members must also accept the terms of unlimited liability. This concept requires service personnel to complete their assigned tasks without having regard for personal fear or danger, including potential loss of life (DND, 2003, p. 27). Charged with overseeing day-to-day military operations, leaders within the CAF have an even greater obligation as they have the authority to order their subordinates into situations of grave danger, if needed to complete an assigned mission. Therefore, the CAF is continually attempting to improve their recruitment

processes in order to select recruits who demonstrate integrity and are focused on the greater good of the collective, vice the individual benefits for themselves (DND, 2020).

These leaders are given the authority to make 'life and death' decisions for their subordinates. Military personnel are also put into situations where their actions could have strategic and political impact for Canada, as well as its allies. Based on the amount of risk involved, the Government of Canada is responsible to ensure that the Canadian Military is selecting individuals who can handle this level of responsibility (DND, 2020).

Misconduct Within the Canadian Armed Forces

The Canadian Armed Forces are not immune to the occurrence of misconduct and various other forms of deviance within its framework. In recent years, the Canadian Military has had to address cases of misconduct within administrative and operational settings, primarily directed toward female members (Brewster, 2021). This abhorrent issue has become of even greater significance as a substantial number of egregious allegations have involved General and Flag Officers, who make up the highest echelon of CAF leadership, however these incidents are pervasive as they have been evident across all rank levels and environmental commands (Burke & Brewster, 2021). This issue was highlighted in a recent article released by the Canadian Broadcasting Corporation, which detailed situations where 11 senior leaders within the Canadian Military, within a nine-month period, were subjected to allegations (or charges) or were involved in incidences of sexual misconduct, obstruction of justice, inappropriate extramarital affairs, abuse of power, thus demonstrating extremely poor judgement and unprofessional behavior (Burke & Brewster, 2021). Unfortunately for the CAF, these issues are not novel, as the organization has been implicated in legal proceedings related to sexual harassment and misconduct as far back as 2006, if not before (Bissett, 2016).

In addition to issues associated with sexual misconduct, excessive alcohol use within the CAF has led to incidences of wrongdoing in recent years. A 2016 study involving $N = 1980$ service personnel, which evaluated substance use habits across the organization, found that 16.6% of participants within the Canadian Military were best classified as problematic drinkers (Richer et al., 2016), which is a higher percentage than that observed in the general Canadian population (15%) (CCSUA, 2019). Misconduct involving alcohol made international news during a port visit of a Canadian warship to San Diego, California, where multiple sailors were involved in criminal acts of theft, physical conflict and inappropriate sexual behaviour while intoxicated (Foster, 2014).

Despite not being as public as other problems, there have also been situations involving racism, discrimination, and harassment within the organizational confines of the CAF (Brewster, 2021). Collectively, these incidents give support for the existence of leadership and behaviour within the Canadian Military that is self-serving, reckless, immoral, and opposes the conduct standards set out in the DND and CAF Code of Values and Ethics (2020). What should also be of concern for military leadership is that many of these behaviours reflect tendencies that are often associated with higher levels of psychopathy (impulsivity, insensitivity, self-interest) (Schütte et al., 2018). Pursuing avenues to employ selection tools that can predict similar adverse behaviour could better enable the CAF to reduce the number of unsuitable military members they hire within their organization.

CAF Selection Process – Integrity Measures

Military members who work within the Canadian Forces Recruiting Group (CFRG) are employed to attract, process, select and enroll applicants who will meet the individual requirements of their specific military occupation and exhibit the values of the CAF (DND,

2015). To be considered for selection within the Regular Force (full-time service) of the CAF, an applicant must first meet the minimum eligibility requirements of enrollment: (1) be a Canadian citizen, (2) have completed grade ten in their respective province (or equivalent), and (3) be of the age of seventeen (with guardian's consent). Once these criteria are met, they must then meet the required standards for education (for their desired occupation), cognitive testing (for general service and their desired occupation), personality inventory, medical screening, and selection interview. If successful through those assessments, a series of background checks are conducted to evaluate the applicant's personal, professional, educational, residential, financial, and criminal history (DND, 2015).

Despite the CAF's selection model being multifaceted, CFRG does not employ a measure to assess whether their applicants possess or exhibit integrity. Moreover, they heavily rely on background checks to expose problematic or criminal behaviour. Recruiting personnel then review any such behavior that might have been found. Should the applicant's history be so adverse that it goes against the CAF enrollment standards or there is doubt regarding whether they should be granted a security clearance, the applicant's processing will cease.

In 2012, the CAF introduced a self-report personality measure, the Trait Self Descriptive Personality Inventory (TSD-PI), which was adapted from the United States Air Force Self Descriptive Inventory (Catano et al., 2018). The TSD-PI is a 75-item measure that assesses the Five Factor Model of personality (FFM), more specifically, Conscientiousness, Agreeableness, Emotional Stability, Extraversion and Openness to Experience (Boyes, 2005; Darr, 2009). Each service applicant completes the TSD-PI as a part of the screening process to assess how they measure within the Big Five. Using the item bank of the TSD-PI, and the understanding that the personality factors of Conscientiousness, Agreeableness and Emotional Stability have shown an

ability to predict integrity (Ones, 1993; Sacket & Wanek, 1996), a 10-item self-report TSD Integrity Scale has been developed (Catano et al., 2018; Darr, 2019). This measure is currently being explored by the Canadian Military but is not a part of any formal applicant screening or selection process at the present time. As a means of enhancing the CAF's capability to select suitable personnel, additional research is being conducted to determine if other aspects of personality may provide incremental validity in evaluating an applicant's level of integrity over and above the TSD Integrity Scale (Darr, 2019). However, to date this work is on-going and no measures to directly assess dark personality, integrity or workplace deviance are included in the CAF selection model.

The CAF does utilize overt-integrity tests in the selection process of a small number of military occupations (i.e. military police) however this would apply to an extremely small percentage of service applicants and due to the time and resources required to administer, it has not been deemed feasible to broaden the scope of this assessment. Moreover, even though overt-integrity tests have been shown to be reliable and valid measures of workplace deviance and integrity (Ones, 1993), they are also subject to the same principal criticism of explicit self-report personality measures, in that they are susceptible to impression management and faking (Lilienfeld et al., 1995). Due to the direct question style of overt integrity tests, it may be possible for applicants to determine why a question is being asked and provide a response to make themselves look more favourable than an honest answer would warrant, thus potentially causing a false positive error in the assessment (Lilienfeld et al., 1995).

In evaluating the current tools either being used, or under development, in the Canadian Military to assess integrity, workplace deviance, maladaptive behavior or dark personality, there is a demand for an assessment that has an ability to predict relevant workplace behavioural

outcomes while also being resistant to impression management. With this demand, it may be beneficial for the CAF to consider incorporating a measure that utilizes the conditional reasoning framework developed by James (1998) as a part of their applicant selection process.

The Current Study

This study was in support of the CAF's efforts to identify a suitable measure of integrity to be used as a part of military member selection. To enable the study, a Collaborative Research Agreement (CRA2021001) was signed between Director General Military Personnel Research and Analysis (DGMPRA) and a research team from Saint Mary's University (SMU), through prior approval from Director Personnel Generation Requirements (DPGR) of the CAF. The study received ethics clearance from the National Defence/Canadian Armed Forces Social Science and Review Board (SSRB) under SSRB number: 1992/21F and was granted a certificate of ethics clearance from the SMU Research and Ethics Board (SMU REB Registration number: 22-034).

The research involved the Conditional Reasoning Test of Workplace Psychopathy, an implicit measure of subclinical psychopathy. The focus of this research was the completion of a concurrent validity study to assess if the CRT-WP had the ability to predict particular personality factors related to integrity as well as workplace outcomes, more precisely, counter-productive work behaviour, transformational leadership, and organizational citizenship behaviour in military members serving in the Royal Canadian Air Force. Given that those higher in psychopathy tend to display conduct that is more reckless, self-serving, and insensitive, and are generally less reliable, dependable, and honest (Hare, 1994; Ones, 1993; Schütte et al., 2018), it was hypothesized that CRT-WP scores would correlate positively with irresponsibility and CWB but negatively with cautiousness, transformational leadership, OCB and a second order personality factor (FFM) assessing integrity. During the study, the CRT-WP as well as various self-report

measures of relevant workplace outcomes were completed by the sample population over two time points (Time 1: $N = 615$, Time 2: $n = 292$) and if approved by the respective participant, observer-report measures were submitted by their supervisor ($n = 215$).

Method

Sample Population

Participants

In line with the service agreement approved by the Commander of the RCAF, in consultation with the SMU Research Team, Director Air Personnel Strategy and DGMPRA, Regular Force (full-time) service personnel between the ranks of corporal (Cpl) and master-corporal (MCpl) employed within RCAF managed occupations were permitted to participate. After cleaning the data and restricting non-viable responses, the total sample population who completed the Time 1 measures (CRT-WP and integrity scales) was $N = 615$. Details which explain how the data were cleaned will be provided in the procedure section. Of these individuals, 552 (89.8%) were male, 43 (6.8%) were female, 3 (.5%) identified as other and 17 (2.8%) did not identify as a particular gender. The average age of the participants was $M = 35.92$ years ($SD = 7.13$) and ranged in age from 23 to 60 years. Regarding identifiable groups, the vast majority of the population identified as White ($n = 564$, 91.7%), whereas 17 (2.8%) as Indigenous, 11 (1.8%) as a visible minority, 6 (1.0%) as having a disability, 23 (3.7%) as other and 26 (4.2%) preferred not to identify with any group. The number of those who identified with a particular group exceeded the total number of participants in the sample population of the study as individuals were permitted to select any of the groups (i.e. multiple) to which they identified.

The participants had served within the Canadian Military for an average period of $M = 12.63$ years ($SD = 6.18$) and represented 15 RCAF occupations, with the largest subgroups

employed as Aviation System Technicians (n = 171, 27.8%), Avionics System Technicians (n = 148, 24.1%) and Aircraft Structures Technicians (n = 123, 20%). The higher participant percentages from these three occupations were not surprizing to observe as they are the three trades that are by far the largest employers of non-commissioned members within the RCAF. For greater context, the other individuals who were involved in the study (n = 173, 28.1%) were employed in occupations such as Aerospace Telecommunications and Information Systems Technician, Airborne Electronic Sensor Operator, and Flight Engineer as well as nine other trades that support aircraft operations and maintenance of RCAF bases.

Though the requirements of each military occupation are very different from one another, the general enrolment requirements, such as age, citizenship, education, background references, medical standards, and requisite experience, are very similar across new recruits. Additionally, the targeted rank levels utilized in this study had substantially less military experience, thus arguably influenced to a lesser extent by their respective environmental command structure (i.e. Navy, Army, Air Force), than those individuals of more senior rank. Finally, the CAF offers various occupational transfer and commissioning programs which allow service personnel to reach the highest levels of command and appointment across all environments, throughout both non-commissioned member and officer ranks. For these reasons, it was assessed that using a sample population of junior ranking non-commissioned members within the RCAF would not detract from the generalizability of the collected data or findings.

Raters

A total of N = 215 subordinate evaluations were completed by respective supervisors. As expected, the supervisors were older than the subordinates with an average age of M = 41.18 years (SD = 6.54) and possessed a greater degree of military experience, having served on

average $M = 19.69$ years ($SD = 6.59$). Though some supervisors were more junior in rank as 60 (28.3%) were MCpls, the majority were senior supervisors in that 148 (69.8%) were Sergeants or higher and four (1.9%) were commissioned officers. Similar to the participants, the overwhelming majority of supervisors identified as White ($n = 185$, 86.4%), while smaller groups identified as Indigenous ($n = 15$, 7.0%), as a visible minority ($n = 11$, 5.1%), as having a disability ($n = 2$, .9%), or to another group ($n = 5$, 2.3%) whereas 14 (6.5%) did not identify with any group. On average, the period a supervisor had been responsible for a particular subordinate was $M = 14.96$ months ($SD = 12.09$). There was a notable range in supervision period as some individuals only had been responsible for their subordinate for one month (min) where others had been in charge of their subordinate for 72 months (max), or 6 years. This range in supervision period became of specific relevance during the latter data cleaning and analysis portions of the study, which will be explained in the results section.

Procedure

Commencing the study at Time 1, 615 participants completed measures related to workplace psychopathy (CRT-WP), three evaluations assessing personality traits and behaviours related to integrity (TSD Integrity Scale, Cautiousness Scale, Irresponsibility Scale) and for the 292 individuals who were willing to be contacted at Time 2, counterproductive work behaviour (CWB-C). More detail about participation rates will be given later in this section. To mitigate common-method error, 215 subordinates were assessed by their immediate supervisor on their exhibited counterproductive workplace behaviour (Short Version CWB-C), transformational leadership behaviours (GTL), and organizational citizenship behaviour (OCB-C).

The data were collected from the participants over two time points, which were administered 14 days apart. The time-separation between the CRT-WP and self-report CWB was

put in place to decrease the study's reliance on cross-sectional data (Jordan & Troth, 2020;

Podsakoff et al., 2003). More importantly, having supervisors evaluate their subordinates on their

CWB, leadership behaviour, and OCB made the research a multi-source study (and therefore not

solely cross-sectional).

Data Collection and Management

In order to distribute the research materials, DGMPRA supplied a master list of potential

participants who met the rank and occupation requirements approved by the Commander of the

RCAF. The master list consisted of the names, limited demographic information, occupational

details, and e-mail addresses of 2754 junior air force personnel. This information was pivotal as

it allowed mass e-mail distribution to be employed so that participation invitations could be

disseminated in a timely manner. As the primary researcher was a CAF personnel selection

officer, the participants, and their respective supervisors, were contacted via the Defense Wide

Area Network (DWAN) which is the internal correspondence framework of the Canadian

Military, to ensure that all collected data were managed in accordance with the relevant

information security policies.

Given that information about a military member's performance history was requested, a

heightened degree of sensitivity was exercised in handling the data. As such, an identification

system comprising of random unique codes was utilized to connect participants with their

provided data. Prior to promulgating the research invitations, a series of random unique ID codes

were assigned across the participant master list. These codes were used to pair the Time 1 and

Time 2 responses of the participants as well as to match the assessments completed by an

individual's supervisor. The list of the military members' names and the individual random ID

codes were held separately from the collected data. Using this method, the primary researcher,

was the only person who could link the received information to a member or supervisor. This approach ensured that sensitive data would not be compromised even in the extremely unlikely scenario that it was accessed by someone else.

To ensure the mass email system worked as intended, the data collection phase commenced with Time 1 invitations being sent to approximately ten percent of the master participant list. Once the distribution system was tested, the remainder of the included military members were invited to partake in the study. The Time 1 invitations that were sent to the potential participants (see Appendix A), provided them with basic information and instructions about the study, their unique ID code and a link to access the research materials. The research materials were administered via Qualtrics, a web-based survey platform capable of supporting survey research, evaluations, and other forms of data collection. Qualtrics offered a high-level of encryption and allowed an avenue for collected data to be held solely on Canadian servers.

Once the participants reached the research materials, they were given more detailed information about the study, including potential benefits and risks, how their data would be stored, the withdrawal procedure, method to access their information, as well as other salient topics, and then were asked for their consent to participate in the study (see Appendix B). The study offered three levels of consent: i) consent to complete all included measures (Time 1 and 2); ii) consent to partake in Time 1 and not be contacted again; and iii) agree to have their supervisor complete an evaluation on their performance. If a participant chose to partake, they entered their ID code on the first page of their Qualtrics survey (see Appendix B) and proceeded to respond to the measures related to workplace psychopathy and integrity. After completing the required assessments, participants were asked to provide their particular demographic information (see Appendix D). If they agreed to have their supervisor complete the evaluations

related to their performance, their current supervisor was contacted to complete the observer-report assessments (see Appendix A). As previously mentioned, each supervisor was contacted through a similar process via DWAN, supplying them with an invitation which included the name of the subordinate they would be evaluating, the subordinate's ID code, and a link detailing information about the study, a consent form, as well as the CWB, transformational leadership, and OCB assessments to be done (see Appendix C).

On a daily basis, the data would be reviewed to keep track of when participants completed their Time 1 materials. When a participant's Time 1 data were received, their supervisor was contacted the next day to partake in the study if that consent was given. Moreover, each individual's Time 1 completion date was captured so that the Time 2 materials were sent at the appropriate point. Adhering to the recommendations of Podsakoff and colleagues (2003) and Jordan and Troth (2020) to mitigate common method bias, participants who consented to partake in Time 2 were contacted again via email no less than 14 days after Time 1 completion with a link to fill out the self-report CWB measure. Once the CWB information was supplied, participants were thanked for their involvement as they fulfilled the requirements of the study. One reminder email was sent to each subordinate and/or their supervisor two weeks after their initial invitation was sent, to ensure that all invitees had multiple opportunities to partake in the study. In total, the data included in this study were collected over a six-week period. Finally, to fully inform the sample population of the true objective of the research, a debrief letter was sent out via DWAN to all participants after the study was completed. This letter explained the true criterion of the CRT-WP, the importance of studying subclinical psychopathy, substantiation for why this information could not be disclosed earlier in the process, a summary of the results as well as how they could contact the primary researcher

should they have any additional questions or concerns they would like to have addressed. An overview of the data collection methodology is presented in Appendix N.

Participation Rates and Primary Data Cleaning

Of the 2754 junior RCAF members who were invited to partake in the study, 820 commenced the Time 1 measures however, 183 failed to complete the CRT-WP. Compared with the other scales included in the study, the CRT-WP has the most content to read and thus requires the longest time to finish. According to the test developers of the CRT-WP, it has typically taken between 18 and 22 minutes to complete the 22-item measure. Bearing in mind that the CRT-WP was the focal measure of the study, the supporting scales came after the CRT-WP and most importantly, this resultant data would be required to assess all hypotheses, any participant who did not submit a complete CRT-WP was excluded from further analysis.

Therefore, the Time 1 responses of 637 subordinates were reviewed to assess whether they were suitable for inclusion in the study. As recommended by James and Lebreton (2012), Time 1 participants who presented $\geq 25\%$ (≥ 6 items) illogical response choices (or a combination of blank and illogical responses) were also removed from the research. This cut-off was exercised because those who more frequently select the illogical response options are most likely answering carelessly or have difficulty understanding the language of administration, and risk impacting the validity of the data (Lebreton et al., 2020). Following this guideline, a further 22 (3.4%) participants were classified as illogical respondents and were removed which was well under the < 5% observed in previous CRT research (Lebreton et al., 2020). With these exclusions, the data of 615 were retained thus resulting in a 22% participation rate for Time 1.

Four hundred and ninety-two (80%) of the 615 participants who completed Time 1, agreed to be contacted to partake in Time 2 of the study. However, of the 492 who were invited

to Time 2, 316 commenced the measures and the data of 292 participants were retained for further analysis, therefore achieving a 47.5% participation rate for Time 2. At this stage of the research, the data of 24 cases were excluded due to issues with not completing the Time 2 measures, having already been classified as an illogical respondent, submitting an incorrect identification code, providing duplicate submissions, or having not previously completed the Time 1 materials.

Finally, 340 (55%) of the 615 participants who completed the Time 1 measures consented to allowing their immediate supervisor to evaluate their performance, to support the requirements of the study. The majority of this group had a unique supervisor however in 27 cases, a supervisor had to evaluate more than one subordinate: 26 supervisors assessed two and only one supervisor evaluated three individuals. However, this information suggested the presence of some nested data within the supervisor-report outcomes, which needed to be considered during the final analysis. Of the 340 invitations that were distributed, 246 supervisors responded but 215 successfully completed the studies requirements. The data of 31 supervisors were excluded as many commenced, but did not finish, the evaluations or inputted an incorrect subordinate identification code, inadvertently restricting the data from being matched to the appropriate participant. As such, this resulted in a participation rate of 63.2% for the supervisors who were invited to be involved, and a participation rate of 35% for the subordinates who could have invited their supervisor to support the research.

Power Analysis

To determine the number of participants needed for the study, a priori analysis was completed via G*Power to achieve a power of .85 (one-tailed). Given the bivariate correlational effect sizes demonstrated in the literature between variables to be incorporated in the research, a

Pearson's $r = .20$ ($p = .05$) was utilized within the calculation, which was assessed as a conservative benchmark (Hare, 1980; Mathieu & Babiak, 2015; Patrick, 2010; Paulhus & Williams, 2002; Schütte et al., 2018; Webster & Smith, 2019). The results of the analysis revealed that a final sample of 174 participants would have to complete the Time 1 and Time 2 scales respectively and/or have their supervisor submit the pertinent observer-report evaluations, for the hypothesized relationships to be assessed.

Measures

Workplace Psychopathy

Workplace psychopathy was assessed via the Conditional Reasoning Test – Workplace Psychopathy (CRT-WP; Cook & Roulin, 2021) (see Appendix F). The CRT-WP is comprised of 22 items that are used to assess two factors of psychopathic tendencies, through one's implicit personality: individual-oriented (self) and other-oriented. The individual-oriented factor includes such justification mechanisms/facets of psychopathy as carefree impulsivity, fearlessness, whereas the other-oriented factor incorporates ruthless self-interest and insensitivity. Both factors contain items related to the justification mechanisms of social superiority and externalization but are presented in a way that respectively apply to the two factors of the measure. Participants completed the CRT-WP under the context that the measure was assessing their reasoning ability. They were asked to answer each workplace problem/issue/scenario with the option that reflected their most logical and reasonable response. The measure uses a -1, 0, +1, scoring format, and participants receive a cumulative score by being given, +1 for each anti-social response, -1 for each pro-social response, and 0 for each illogical response (therefore a raw score range of -22 to +22). An example item is:

Blair does not like his co-worker Sajid. Yesterday, Blair put salt in Sajid's coffee instead of sugar when no one was looking. When Sajid sipped his coffee and spit it out, Blair laughed to himself in pleasure.

Which is most likely true about Blair's feelings toward Sajid?

a) Blair's dislike of Sajid is selfish and could be motivated by racism.
b) Blair actually likes Sajid subconsciously.
c) Sajid is the father figure for Blair in their organization.
d) Blair's dislike of Sajid is a result of something Sajid did to him in the past.

The CRT-WP has achieved a test-retest reliability value of .73 and convergent validity ($.15 \leq r \geq .27$) with self-report measures of psychopathy (Cook & Roulin, 2021). Within this current study, the CRT-WP achieved reliability values (KR-20 coefficients) of .82 at the scale level and .72 for Factor 2 of the measure (Other-Oriented Psychopathy). Factor 1 of the CRT-WP (Individual Oriented Psychopathy) only attained a KR-20 value of .43. However, since the hypotheses of the study were evaluated at the scale (not factor) level of the CRT-WP, the low reliability coefficient observed for Factor 1 – Individual Oriented Psychopathy did not impact the results of the study.

Integrity – TSD-Integrity (Self-report)

Integrity was evaluated with the Trait Self Descriptive – Integrity Scale (TSD-Integrity Scale; Catano et al., 2018) (see Appendix G). The 10-item measure consists of a three-factor second order structure to evaluate the higher order construct of integrity. The scale uses a Big Five model of personality approach to assess the construct by evaluating levels of Conscientiousness, Agreeableness and Emotional Stability in participants. Individuals were asked to rate the extent to which each statement or adjective described them using a 7-point Likert scale (1 = *extremely uncharacteristic* to 7 = *extremely characteristic*). Example items are "I am always generous when it comes to helping others", or "Helpful" which are used to assess Agreeableness. This integrity composite scale was developed from the 75-item Trait Self-Descriptive Personality Inventory which is used by the CAF to assess the personality profiles of

their service applicants and military members. The TSD – Integrity Scale achieved a reliability coefficient of α = .79 during this study.

Integrity – Cautiousness (Self-report)

Integrity was also assessed using a 10-item Cautiousness Scale, derived at the facet-level of the Conscientiousness construct within the International Personality Item Pool (IPIP; Goldberg et al., 2006; Darr, 2019) (see Appendix H). Pertaining to behaviours associated with workplace psychopathy, cautiousness may be considered the antonym of risk-taking (more common in higher levels of psychopathy) (Boddy, 2010). Participants were asked to rate how accurately each statement described as they see themselves, on a 5-point scale (1 = *very inaccurate*; 2 = *moderately inaccurate*; 3 = *neither inaccurate nor accurate*; 4 = *moderately accurate*; 5 = *very accurate*). An example item is "Choose my words with care". The Cautiousness Scale attained a reliability coefficient of α = .83 in this research.

Integrity – Irresponsibility (Self-report)

Integrity was assessed with a third measure, a 7-item Irresponsibility Scale, stemming from the Personality Inventory of the Diagnostic and Statistical Manual of Mental Disorders - V (PID-5; Krueger et al., 2012; Darr, 2019) (see Appendix I). Irresponsibility is a facet of disinhibition, which has also been associated with psychopathy (Boddy, 2010). Individuals were asked to rate how accurately each statement described as they see themselves, on a 4-point scale (1 = *very false or often false*, 2 = *sometimes or somewhat false*, 3 = *sometimes true or somewhat true*, 4 = *very true or often true*). An example item is "I make promises that I don't intend to keep". The Irresponsibility Scale reached an acceptable level of reliability in the concurrent validity study, α = .72.

Counterproductive Work Behavior (CWB) (Self-report)

CWB was evaluated with the Counterproductive Work Behaviour – Checklist (CWB-C; Spector et al., 2006) (see Appendix J). Using 30-items of the measure, the following subscales were assessed: abuse towards others, production deviance, sabotage, theft, and withdrawal. Participants were asked to rate how frequently they engaged in these behaviours over the past six months within their current job by responding with a 5-point scale (1 = *never,* 2 = *once or twice*, 3 = *once or twice per month*, 4 = *once or twice per week*, 5 = *everyday*). An example item is, "Insulted someone about their job performance" which is contained within the abuse sub-scale. Two theft related items from the measure were removed, "Put in to be paid more hours than you worked" and "Took money from your employer without permission", because due to the work conditions of the sample, these scenarios would likely not be applicable. During this study, a reliability coefficient of $\alpha = .84$ was observed for the CWB-C.

Counterproductive Work Behavior (CWB) (Supervisor-report)

CWB was also assessed from the perspective of the supervisor using a 10-item version of the Counterproductive Work Behaviour – Checklist (Short Version CWB-C; Spector et al., 2010) (see Appendix K). Given the operational tempo of supervisors within the CAF, the Short Version CWB-C was selected to minimize the administration time required to collect this information. Drawing on the questions from the 32-item CWB-C, the shorter scale contains two sets of five items that respectively evaluate organizational-focused (wasting employer's materials, complaining about work) and person-focused (insulting a colleague, starting an argument) work deviance. Supervisors were asked to rate how frequently their subordinate engaged in these behaviours over the past six months within their current job by responding with a 5-point scale (1

= *never, 2 = once or twice*, 3 = *once or twice per month*, 4 = *once or twice per week*, 5 =

everyday). The Short Version CWB-C attained a reliability coefficient of α = .89.

Transformational Leadership Behaviour (Supervisor-report)

Transformational leadership behaviour was evaluated using the Global Transformational

Leadership Scale (GTL; Carless et al., 2000) (see Appendix L). The 7-item GTL is a short

measure that has been established to evaluate a single construct of leadership, however does so

by assessing seven broad behaviours associated with transformational leadership: vision

(communicates clear vision of future), staff development (individualized consideration),

supportive leadership (encouragement and recognition of staff), empowerment (fosters trust,

team involvement), innovative thinking (inspires problem-solving via new ideas), lead by

example (conviction in values and behavioural standards) and charisma (instills pride and

competence in others). Supervisors were asked to complete this scale, by rating their subordinate

in terms of how frequently they engaged in the listed behaviours over the past six months of their

current job, using a 5-point Likert scale (1 = *rarely to never*, 3 = *sometimes*, 5 = *very frequently,*

if not always). An example item is "Communicates a clear and positive vision of the future",

which is used to assess vision. The reliability coefficient of the GTL was excellent, α = .91.

Organizational Citizenship Behavior (OCB) (Supervisor-report)

OCB was assessed with the Organizational Citizenship Behaviour – Checklist (OCB-C;

Fox et al., 2012) (see Appendix M). The OCB-C contains 20 items (through two factors) which

evaluate discretionary helping behaviours directed at an employee's organization (OCB-O;

offered suggestions for how to improve work methods) or individuals (i.e. colleague) within the

workplace (OCB-I; helped co-worker finish their work). Supervisors were asked to complete this

scale, by rating their subordinate in terms of how frequently they engaged in the listed

behaviours over the past six months of their current job, using a 5-point scale (1 = *never,* 2 = *once or twice*, 3 = *once or twice per month*, 4 = *once or twice per week*, 5 = *everyday*). An example item is "Took time to advise, coach, or mentor a co-worker", which is incorporated in the OCB-I factor. The OCB-C Scale achieved the highest reliability coefficient of any measure included in the study, α = .94.

Results

The focus of this study was to evaluate the concurrent validity of the CRT-WP, a type of criterion validity that "relates to the relationship between test scores and criterion measurements made at the time the test was given" (Crocker & Algina, 1986, p. 224). As described by Crocker and Algina, concurrent validity is typically evaluated by assessing the correlation coefficient between a respective predictor and outcome variable. After an extensive literature review on psychopathy and the variables included in this research (integrity (via personality factors), counterproductive work behaviour, transformational leadership and organizational citizenship behaviour), the evidence suggested that there were clear relationships between these entities. Given that the CAF integrity scales are still under development, interpreting the resultant relationships with these assessments may more aptly be described as expanding the construct validity or the nomological network of the CRT-WP than assessing its criterion validity in this area, however the method of analysis would remain the same.

The descriptive statistics, intercorrelations and reliability coefficient values for the variables evaluated in this study are presented in Table 2 below. All complete measures included in this research achieved acceptable to excellent reliability values which ranged from $.72 \leq \alpha \leq .94$ and the majority of scales reached $\geq$ .80, well exceeding the generally agreed upon Cronbach's Alpha (α = .70) threshold (Meyers et al., 2017).

Final Data Cleaning and Assumption Checks

Preceding any analyses, missing values within the data and the assumptions of normality, outliers, linearity, homoscedasticity, interdependence, and collinearity were evaluated. There was a limited amount of missing data contained within the completed measures. Across the two time points and supervisor ratings, missing data were observed in no more than six cases ($< 2\%$) respectively, and in most examples, less than four entries were missing per case. No particular item was omitted disproportionally over any other, which supported that there was no systematic pattern to the missing items and therefore were missing completely at random (MCAR). Though listwise deletion is a more conservative approach to manage a small amount of missing data, given that the sizes of the subgroups who completed the measures at each stage were vastly different, pairwise deletion was utilized to facilitate the final correlations (Meyers et al., 2017).

To evaluate the assumption of normality, standardized values were calculated for the included measures at the scale level. In assessing the skew, kurtosis, significant Shapiro-Wilks tests and non-normal Q-Q plots of the included measures, there was substantial evidence to suggest that normality had been violated. To further explain, standardized values of the CRT-WP, TSD-Integrity, Irresponsibility, CWB (self and observer report) as well as leadership (or 6 of 8 of the evaluated measures) presented non-normal skew and kurtosis results. Within the non-normal measures, skew values ranged from $-7.81 \leq z\text{-skew} \leq 26.03$ with some of the more extreme values observed in the observer-report CWB (z-skew = 26.03), Irresponsibility (z-skew = 22.72), self-report CWB (z-skew = 16.03), Leadership (z-skew = -7.81), and CRT-WP (z-skew = 7.40) scores. Similarly, kurtosis values were quite large as they reached 78.33 with the most pronounced kurtotic data reflected in the observer-report CWB (z-kurtosis = 78.33), Irresponsibility (z-kurtosis = 37.25) and self-report CWB (z-kurtosis = 24.55) scales.

Table 2

Means, Standard Deviations, Reliability Coefficients and Intercorrelations

Variable	n	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Age – Years (Participant)	599	35.91 (7.13)	-																			
2. Age - Years (Supervisor)	211	41.17 (6.54)	.15*	-																		
3. Service - Years (Participant)	613	12.63 (6.18)	.59**	.15*	-																	
4. Service – Years (Supervisor)	214	19.69 (6.59)	.01	.56**	.12	-																
5. Supervisory Period - Years	213	1.25 (1.01)	.04	.02	-.03	.04	-															
6. Workplace Psychopathy	615	-.63 (.22)	.01	-.07	.03	-.01	.01	**.82**														
7. WP – Individual Oriented Psychopathy	615	-.67 (.26)	.02	-.02	.02	.01	.02	.73**	**.43**													
8 WP – Other Oriented Psychopathy	615	-.60 (.29)	-.01	-.08	.03	-.02	.00	.86**	.29**	**.71**												
9. Integrity	614	5.38 (.72)	.03	.06	.00	.06	-.06	-.13**	-.06	-.14**	**.79**											
10. Cautiousness	613	3.75 (.61)	.13**	.22**	.03	.06	.10	-16**	-.15**	-.12**	.39**	**.83**										
11. Irresponsibility	610	1.26 (.34)	-.04	-.26**	.04	-.06	.05	.19**	.17**	.14**	-.44**	-.46**	**.72**									
12. CWB - Total	292	1.16 (.19)	-.07	-.12	-.10	-.05	-.01	.21**	.21**	.13**	-.29**	-.30**	.30**	**.84**								
13. CWB - Sabotage	292	1.05 (.20)	-.10	-.14	-.12	-.06	-.07	.09	.08	.07	-.16**	-.08	.17**	.56**	**.56**							
14. CWB - Withdrawal	292	1.38 (.44)	.02	-.02	.05	.06	-.05	.11	.19*	.01	-.29**	-.23**	.30**	.75**	.39**	**.63**						
15. CWB - Production Deviance	292	1.09 (.23)	.00	-.06	-.01	-.05	.03	.11	.15*	.05	-.18**	-.11	.29**	.67**	.55**	.55**	**.43**					
16. CWB - Theft	292	1.05 (.16)	-.02	-.01	.04	.04	.01	.05	.03	.05	-.10	-.12	.09	.41**	.34**	.29**	.27**	**.40**				
17. CWB - Abuse	292	1.16 (.22)	-.09	-.14	-.17**	-.09	.01	.23**	.19**	.18**	-.23**	-.31**	.23**	.91**	.37**	.48**	.48**	.26**	**.77**			
18. Leadership (supervisor-report)	185	4.20 (.72)	.05	.10	.01	.02	-.06	-.09	-.01	-.12	.21**	.11	-.22**	-.06	.00	-.13	-.01	-.07	-.02	**.91**		
19. OCB (supervisor-report)	184	3.20 (.78)	.03	.10	.10	.09	.01	.09	.11	.05	.14	.04	-.19**	-.01	.04	-.09	.04	.07	.00	.65**	**.94**	
20. CWB (supervisor-report)	184	1.23 (.42)	-.02	-.14	.00	-.04	.02	.07	.05	.06	-.08	-.07	.13	.10	-.01	.19*	.06	.09	.05	-.52**	-.21**	**.89**

Note. Cronbach's alphas (α) are bolded on the diagonal. WP reliability via KR-20. Pairwise deletion was used to facilitate intercorrelations. Intercorrelations exclude attention checks failures. * $p < .05$, ** $p < .01$.

Only two measures, Cautiousness and OCB, presented normal skew and kurtosis data. All scales, with the exception of OCB, resulted in a significant Shapiro-Wilks test. However, violations of normality were expected given the type of information assessed in this study. When assessing such polarized factors as workplace psychopathy and deviant acts, non-normal distributions are reasonable to observe and therefore not overly problematic (Kelloway, 2021). Nevertheless, to mitigate the influence of non-normal distributions, all analyses were bootstrapped when possible.

The scale-level standardized values were used to evaluate univariate outliers. Some univariate outliers were present within the CRT-WP, TSD-Integrity, CWB-C, GTL and Short version CWB-C responses. Across the measures, a total of $n = 19$ univariate outliers exceeded $z = -/+ 3.3$, as scores ranged from $-4.57 \leq z \leq 7.99$, with some of the largest values observed in the CWB scales. However, before considering the removal of any univariate outliers, multivariate outliers were assessed through Mahalanobis and Cook's distances to determine their influence on the data. Based on the design of the study, the multivariate outlier assessments were done amongst the scales within each time point: i) CRT-WP with Time 1, ii) CRT-WP with Time1/Time 2 and iii) CRT-WP with Supervisor measures respectively. Though some multivariate outliers were identified, they were not deemed troublesome as resultant Cook's distances were < 1, ranging from $0 < D_i < .54$. Sporadic spot-checking was conducted to ensure that no erroneous combination of responses existed in the data and no issues were identified. These results demonstrated that despite multivariate outliers being present in the data, none would have a disproportionate influence on the analysis. Moreover, as many of the variables were expected to have non-normal distributions, and this information was focal to the goals of the study, no further cases were removed.

In evaluating the other assumptions relevant to the primary analysis, there were no indications that linearity, homoscedasticity, interdependence, or collinearity had been violated. Considering that the CRT-WP had a built-in validity check, through its illogical respondent cut-off (i.e. > 25% illogical responses), no additional attention checks were included in the Time 1 measures (James & Lebreton, 2012). However, to ensure that quality data were used in the research results, two attention checks were respectively incorporated within the Time 2 and Supervisor research materials. Participants who failed either of the attention checks (Time 2: $n = 19$, supervisor ratings: $n = 30$) were excluded from the correlations evaluated in the study.

As there was a subgroup of supervisors who evaluated more than one subordinate, multilevel modeling (MLM) was completed to understand the influences of group level factors (level 2). Upon evaluating the interclass correlation coefficients (ICC) of the observer report criterion: leadership (ICC = negligible – redundant covariance), CWB (ICC = .53), and OCB (ICC = .31), it was assessed there was insufficient variance at the supervisor level, based on the unstable nature of the results. Bearing in mind that some ICC values were excessively high while others were negligible, the system likely had difficulty partitioning the group effect from the individual effect, as the vast majority of the data were interdependent. However, to further explore the potential influence of nested data on the findings of this study, the hypothesized correlations were recalculated with a sub-sample so that each supervisor assessed only one participant. As expected, the relationships of the supervisor-report outcomes remained the same. In light of this result, MLM was deemed as unnecessary. Subsequent details related to the completed MLM can be found in Annex O. Thus, the guidance of Crocker and Algina (1986) was followed, and bivariate correlational analyses were used to assess the proposed hypotheses.

Evaluation of Hypotheses

H1 – Psychopathy and Integrity (TSD-Integrity - Self-Report)

It was hypothesized that a significant negative relationship would result between the two variables. Results indicated that a small negative correlation existed, $r(612) = -.129$, $p < .001$, *BCa 95% CI* [-.206, -.050]. Therefore, hypothesis one was supported.

H2 – Psychopathy and Integrity (Cautiousness (Higher)) – Self-Report)

It was hypothesized that a significant negative relationship would result between the two variables. Results indicated that a small negative correlation existed, $r(611) = -.161$, $p < .001$, *BCa 95% CI* [-.237, -.082]. Therefore, hypothesis two was supported.

H3 – Psychopathy and Integrity (Irresponsibility (Lower)) – Self-Report)

It was hypothesized that a significant positive relationship would result between the two variables. Results indicated that a small positive correlation existed, $r(608) = .186$, $p < .001$, *BCa 95% CI* [.108, .261]. Therefore, hypothesis three was supported.

H4 – Psychopathy and Counterproductive Work Behaviour (Self-Report)

It was hypothesized that a significant positive relationship would result between the two variables. Results indicated that a small positive correlation existed, $r(271) = .214$, $p < .001$, *BCa 95% CI* [.097, .324]. Therefore, hypothesis four was supported.

A significant small positive relationship also existed between participant psychopathy and the self-reported CWB factor of abuse, $r(271) = .232$, $p < .001$, *BCa 95% CI* [.117, .342]. None of the other CWB factors (sabotage, withdrawal, production deviance, or theft) were significantly related to participant psychopathy.

H5 – Psychopathy and Counterproductive Work Behaviour (Supervisor-Report)

It was hypothesized that a significant negative relationship would result between the two variables. Results indicated that participant psychopathy and CWB as rated by supervisors were not significantly related, $r(183) = .070$, $p = .347$, *BCa 95% CI* [-.075, .212]. Therefore, hypothesis five was not supported.

H6 – Psychopathy and Leadership (Supervisor-Report)

It was hypothesized that a significant negative relationship would result between the two variables. Results indicated that participant psychopathy and transformational leadership as rated by supervisors were not significantly related, $r(183) = -.094$, $p = .202$, *BCa 95% CI* [-.235, .051]. As such, hypothesis six was not supported.

H7 – Psychopathy and Organizational Citizenship Behaviour (Supervisor-Report)

It was hypothesized that a significant negative relationship would result between the two variables. Results indicated that participant psychopathy and OCB as rated by supervisors were not significantly related, $r(183) = .088$, $p = .236$, *BCa 95% CI* [-.057, .229]. Finally, hypothesis seven was not supported.

Supplementary and Exploratory Analyses

Incremental Validity and Relative Weight Analyses – CRT-WP with Integrity Measures

The correlational analyses displayed that the CRT-WP was significantly related to the three integrity measures under development within the CAF and had the ability to predict general and abusive acts of work deviance. Given these findings, post-hoc hierarchical regression analyses were conducted to determine if the CRT-WP would explain incremental variance, over and above the CAF integrity measures, in predicting acts of CWB and abuse.

Counterproductive Work Behaviour (DV). Initially, TSD-Integrity, Cautiousness, and Irresponsibility were entered into the model. The model was significant, $R^2 = .154$, $F(3, 266) = 16.13$, $p < .001$. An evaluation of the total relationship between self-reported CWB and the included integrity measures presented an $R = .392$, which is considered a medium effect size. When CRT-WP was entered in block two, the model was still significant, $R^2 = .172$, $R^2_{change} = .019$, $F_{change}(1, 265) = 5.93$, $p < .05$, showing that participant psychopathy explained an additional 1.9% variance in predicting self-reported acts of CWB, over and above the CAF integrity measures.

Examining the resultant coefficients showed that self-reported work-related deviant acts were uniquely and significantly negatively predicted by integrity (via TSD-Integrity) ($b = -.05$, $SE = .02$, $t(1) = -2.48$, $p < .05$, $CI = [-.08, -.01]$), cautiousness ($b = -.06$, $SE = .02$, $t(1) = -3.00$, $p < .01$, $CI = [-.10, -.02]$), but positively predicted by psychopathy ($b = .12$, $SE = .05$, $t(1) = 2.44$, $p < .05$, $CI = [.02, .23]$), and irresponsibility ($b = .09$, $SE = .04$, $t(1) = 2.07$, $p < .05$, $CI = [0, .23]$).

To better understand the predictive validity of each aspect of the model, relative weight analysis was carried out (Johnson, 2000). Relative weight analysis (RWA) allows for the total variance of regression analysis to be explained in a way that accurately represents each predictor's proportionate contribution to a model (Tonidandel & Lebreton, 2015). The results of the RWA are contained in Table 3. The RWA showed that a weighted linear combination of the four included measures explained 14.3% of variance in predicting self-reported CWB, a slightly lower percentage than was provided via the conducted hierarchical regression analysis. Though all the measures were significant predictors, the RWA suggested the most important variables to be TSD-Integrity (RRW = 30.68%) and Cautiousness (RRW = 29.27%), whereas the CRT-WP (RRW = 18.26%) was deemed to be the least important predictor of self-reported CWB.

Table 3

Summary of Relative Weight Analysis – CWB

Predictor	Relative Weight (RW)	RRW CI-L	RRW CL-U	Rescaled Relative Weight (%)
CRT-WP	.026*	.003	.073	18.26
TSD-Integrity	.044*	.013	.093	30.68
Cautiousness	.042*	.010	.096	29.27
Irresponsibility	.031*	.005	.194	21.78

Note. Criterion is self-reported acts of CWB, $R^2 = .143$. Bootstrapped 10000 times. $*p < .05$.

Abuse - CWB (DV). Once again, TSD-Integrity, Cautiousness, and Irresponsibility were first entered into the model. The model was significant, $R^2 = .128$, $F(3, 266) = 13.02$, $p < .001$. The assessment of the total relationship between self-reported abusive acts and the included integrity measures exhibited an $R = .358$, which again is considered a medium effect size. When CRT-WP was entered in block two, the model was still significant, $R^2 = .154$, $R^2_{change} = .026$, $F_{change} (1, 265) = 8.14$, $p < .01$, showing that participant psychopathy explained an additional 2.6% of variance in predicting self-reported acts of abuse, over and above the CAF integrity measures.

The resultant coefficients of the model revealed that self-reported abusive acts were uniquely and significantly negatively predicted by cautiousness ($b = -.09$, $SE = .02$, $t(1) = -3.88$, $p < .001$, $CI = [-.13, -.04]$), and positively predicted by psychopathy ($b = .17$, $SE = .06$, $t(1) = 2.85$, $p < .01$, $CI = [.05, .28]$). In both steps of the hierarchical regression, integrity (via TSD-Integrity) and irresponsibility were not significant predictors of self-reported abusive acts.

Relative weight analysis was also conducted to better dissect the hierarchical predictive model of self-reported abuse. See Table 4 for a summary of the results.

Table 4

Summary of Relative Weight Analysis – Abuse

Predictor	Relative Weight (RW)	RRW CI-L	RRW CL-U	Rescaled Relative Weight (%)
CRT-WP	.035*	.004	.091	27.74
TSD-Integrity	.027	.005	.064	20.82
Cautiousness	.053*	.013	.115	41.17
Irresponsibility	.013	.003	.084	10.27

Note. Criterion is self-reported abusive acts $R^2 = .128$. Bootstrapped 10000 times. $p < .05$.

The RWA results exhibited that a weighted linear combination of the four included measures explained 12.8% of the variance in predicting self-reported abuse, again a lower percentage than was seen in the previously conducted regression analysis. In this iteration of RWA, only two variables were significant predictors of self-reported acts of abuse and therefore the most important variables: Cautiousness (RRW = 41.17%) and CRT-WP (RRW = 27.74%). Akin to the regression results, TSD-Integrity and Irresponsibility scales were not significant predictors of abuse.

Moderation Analysis – Supervision Period

As stated in the method section, there were a substantial number of supervisors who had very little experience overseeing their subordinate. This point was of notable relevance as the supervisors were asked to rate how frequently their subordinate demonstrated particular behaviours (CWB, leadership, and OCB) over the past six months of their current job. It was assessed that superiors having a lack of supervisory experience, specifically under the stipulated evaluation period of the three behaviours listed above, may lead to inaccurate assessments. Therefore, a series of regression analyses, via the PROCESS macro (Hayes, 2017), were conducted to determine if the period of supervision between a superior and their subordinate

moderated the relationship between the CRT-WP and the three observer report outcomes. The three regression models which consisted of the CRT-WP, supervision period and the interaction term between the two independent variables to predict the respective supervisor rated outcomes were non-significant: CWB ($R = .108$, $R^2 = .012$, $F(3, 209) = .82$, $p = .487$), transformational leadership ($R = .129$, $R^2 = .017$, $F(3, 209) = 1.19$, $p = .316$), and OCB ($R = .129$, $R^2 = .017$, $F(3, 209) = 1.18$, $p = .318$). In assessing the interaction effects of each model, results indicated that supervision period did not moderate the relationship between the CRT-WP and either of supervisor-rated CWB ($b = -.012$, $SE = .01$, $t = -1.01$, $p = .276$, $R^2_{change} = .006$, $F_{change}(1, 209) = 1.19$, $p = .276$), leadership ($b = -.020$, $SE = .02$, $t = -1.05$, $p = .293$, $R^2_{change} = .005$, $F_{change}(1, 209) = 1.11$, $p = .293$) or OCB ($b = -.030$, $SE = .02$, $t = -1.48$, $p = .140$, $R^2_{change} = .010$, $F_{change}(1, 209) = 2.19$, $p = .140$).

However, as 42 supervisors had no more than six months of time overseeing their subordinates (i.e. less than the assessment period of the observer report ratings), bivariate correlational analyses were re-conducted to explore if excluding these inexperienced individuals would impact the relationships between the CRT-WP with the supervisor outcomes. No change was observed between the CRT-WP and either CWB ($r(141) = .120$, $p = .155$, *BCa 95% CI* [-.045, .278]) or OCB ($r(141) = .030$, $p = .723$, *BCa 95% CI* [-.135, .193]). Yet, when inexperienced supervisors were removed from the analysis, a small negative correlation between the CRT-WP and transformational leadership was observed, $r(141) = -.170$, $p < .05$, *BCa 95% CI* [-.326, -.007]. It is to be emphasized that this level of review is purely exploratory in nature and when the entire eligible sample population was considered, no significant relationships resulted between the CRT-WP and the supervisor ratings. Nevertheless, given a significant

relationship resulted between the CRT-WP and transformational leadership when more experienced supervisors were assessed, this association may warrant further review in the future.

Assessment of Group Differences – Supervisor Consent

After completing the final data cleaning process, it was observed that a large portion of the sample population did not consent to have their supervisor evaluate their performance (n = 275, 44.7%). Thus, a series of post-hoc independent t-tests were conducted to assess if there were significant differences in their Time 1 test scores (CRT-WP, TSD-Integrity, Cautiousness, Irresponsibility), compared with those who consented to the supervisor ratings (n = 340, 55.3%). Prior to conducting the t-tests, the assumptions of normality and homogeneity of variance were assessed across the four measures. After splitting the group into the two categories of supervisor consent (Yes & No), skew, kurtosis, Shapiro Wilks tests and QQ plots were evaluated. Similar to the primary analysis, there were indications that normality may have been violated (See Table 5).

Table 5

Skew, Kurtosis and Shapiro Wilks' Test Results of Time 1 Measures for Participants who Did and Did Not Consent to Supervisor Evaluations

Group	Predictor	z-skew	z-kurtosis	Shapiro Wilks' Statistic	df	p
Consent	CRT-WP	6.95	5.98	.947	337	<.001
	TSD-Integrity	-3.04	.706	.986	337	<.01
	Cautiousness	-2.57	-.98	.984	337	<.001
	Irresponsibility	16.62	27.74	.741	337	<.001
No Consent	CRT-WP	3.38	1.08	.968	272	<.001
	TSD-Integrity	-5.32	5.22	.965	272	<.001
	Cautiousness	-1.96	2.11	.977	272	<.001
	Irresponsibility	14.05	20.36	.774	272	<.001

Note. Total sample size of N = 615, with n = 340 consenting and n = 275 did not consent.

Aside from the Cautiousness scale, each measure in at least one group presented skew and kurtosis values which indicated that normality had been violated. Significant Shapiro Wilks' supported those non-normal indications. Furthermore, significant Levene's tests across all completed *t*-tests, also suggested that the assumption of homogeneity of variance had been violated. Thus, Mann-Whitney U test results are reported, as this test is robust to assumption violations.

CRT-WP Scores. Participants who did not give consent to have their supervisor evaluate their performance (M = -.598) differed significantly in CRT-WP scores from those participants who did give consent (M = -.656) during the study, U = 40025, z = -3.22, $p < .01$, r = .144 (small effect size). Therefore, those who did not consent to supervisor evaluations showed higher subclinical psychopathy scores than those who did consent.

TSD-Integrity Scores. Participants who did not give consent to have their supervisor evaluate their performance (M = 5.24) differed significantly in TSD-Integrity scores from those participants who did give consent (M = 5.49) during the study, U = 37826, z = 4.34, $p < .001$, r = .188 (small effect size). As such, those who did not consent to supervisor evaluations showed lower TSD-Integrity scores than those who did consent.

Cautiousness Scores. Participants who did not give consent to have their supervisor evaluate their performance (M = 3.71) did not differ significantly in cautiousness scores from those participants who did give consent (M = 3.79) during the study, U = 43679, z = 1.46, p = .205, r = .060.

Irresponsibility Scores. Participants who did not give consent to have their supervisor evaluate their performance (M = 1.32) differed significantly in irresponsibility scores from those participants who did give consent (M = 1.21) during the study, U = 38565, z = -3.88, $p < .001$, r

= .161 (small effect size). Finally, those who did not consent to supervisor evaluations showed higher irresponsibility scores than those who did consent.

To summarize, those who did not consent to have their supervisor evaluate their performance for research purposes had statistically significant higher subclinical psychopathy and irresponsibility scores as well as lower integrity scores (via TSD-Integrity), than those who allowed their supervisor to evaluate their performance. It should be highlighted that all significant differences resulted in small effect sizes. The groups did not differ significantly in levels of cautiousness.

Discussion

The primary focus of this research was to conduct a concurrent validity study to better understand how resultant CRT-WP scores related to personality factors associated with integrity, as well as acts of counterproductive work behaviour, transformational leadership and organizational citizenship behaviour in a sample population of serving military members. This study was designed to increase the understanding of the CRT-WP's validity, so that it could be potentially employed in selection settings. Given that the CAF is actively pursuing an integrity measure to help detect individuals who are unsuitable for service, due to problematic conduct and beliefs, the outcomes of this study give some insight into the CRT-WP's viability for use in employee selection (Darr, 2019). The CRT-WP was shown to be a reliable measure of subclinical psychopathy that is able to predict particular personality factors and behaviours relevant to workplace performance (Mathieu & Babiak, 2015; Patrick, 2010; Paulhus & Williams, 2002; Schütte et al., 2018). More specifically, the CRT-WP correlated as hypothesized with the incorporated CAF integrity measures and was able to predict self-reported acts of workplace deviance and abuse.

Also of interest, the CRT-WP displayed incremental validity over CAF integrity measures in predicting CWB and abuse and was assessed to be an important contributor in predicting abusive workplace behaviours. Additionally, the CRT-WP did not relate to particular demographic factors such as age or service tenure and as such, did not demonstrate bias in these areas. Though more detailed interpretations of the relationships between the CRT-WP and the included criteria will be provided, the results of this study build on the promising findings of Cook and Roulin (2021) and suggest that the measure could add value in a selection context.

Similar to the outcomes of Cook and Roulin (2021), the CRT-WP achieved a significant negative relationship with the TSD-Integrity scale. To recap, the TSD-Integrity scale is a 10-item measure, which is based on a second order factor structure comprised of Conscientiousness (C) (four items), Agreeableness (A) (four items) and Emotional Stability (ES) (two items), that has demonstrated construct and convergent validities with other measures used to assess integrity (Catano et al., 2018). From a personality standpoint, these results are consistent with seminal dark personality research which showed those higher in psychopathy tend to exhibit lower levels of Conscientiousness, Agreeableness (Lee & Ashton, 2005; Paulhus & Williams, 2002), and Emotional Stability (Lee & Ashton, 2005). The relationship with the TSD-Integrity is important from a selection viewpoint as the three incorporated personality factors (especially C and A) have been associated with many significant workplace outcomes; being positively related to job performance, job satisfaction, and professional success, and negatively related to workplace deviance, antisocial behaviour and reckless actions (Barrick et al., 2001; Judge et al., 2002; Ones & Viswesvaran, 2001; Smithikrai, 2007; Wanek et al., 2003).

In line with the results of the current research, the TSD-Integrity scale has displayed an ability to predict counterproductive work behaviour (Catano et al., 2018; Darr, 2019; Ones &

Viswesvaran, 2001). However, it should be noted that despite the TSD-Integrity scale achieving

a larger correlation with self-reported CWB than the CRT-WP, both resultant effect sizes were

small. Compared with the TSD-Integrity, this gives further credit to the CRT-WP's criterion

validity to assess employment related outcomes, such as workplace deviance, as relationships

between explicit self-report measures, have the potential to be inflated due to faking (i.e. overly

positive responding) (Fine & Gottlieb-Litvin, 2013), which implicit measures, like the CRT-WP

have shown a resistance against (Lebreton et al., 2020). To further explain, when items can be

manipulated, an observed score has the potential to be distorted as much as a full standard

deviation from a true score (Alliger & Dwight, 2000). Therefore, as both the TSD-Integrity and

the CRT-WP achieved comparable levels of effect in predicting self-report CWB, the correlation

demonstrated by the CRT-WP may provide a clearer view of the criterion validity of the measure

in this area, than that exhibited by the TSD-Integrity. To further highlight this point, recent

research has shown that the TSD-Integrity can be manipulated. In a study where participants

were directed to "fake good", individuals were able to deliberately increase their TSD-Integrity

scores (Cook & Roulin, 2021). Conversely, this same study displayed the CRT-WP's rigour

against faking, as there was no appreciable difference in subject scores when they were told to

answer more favourably.

  As will be pertinent to a number of the criterion outcomes of this research, small

correlations between conditional reasoning test scores and workplace outcomes are consistent

with past work based on other implicit (i.e. CRTs) measures (James & Lebreton, 2012; Lebreton

et al., 2020). For instance, James and Lebreton (2012) highlight that predictions based on

personality (including traditional explicit, self-reports) rarely exceed .40, with most correlations

falling below .30. As such, the correlations in the .20s for the CRT-WP and CWB (or the abuse

factor) observed in the present study are generally aligned with that literature. In addition, as will be discussed later in this section, incremental validity explained by the CRT-WP over and above the TSD-Integrity for predicting CWB (and especially abuse) can be of more practical importance, especially in a context like the CAF.

As anticipated, the CRT-WP was also significantly associated with the Cautiousness and Irresponsibility scales, which are being explored by the CAF for their ability to predict integrity (Darr, 2019). The CRT-WP was negatively related to cautiousness and positively related to irresponsibility participant scores. These outcomes agree with previous research evaluating psychopathy, as those higher in the dark personality trait are more prone to reckless behaviour, impulsivity and have displayed greater tendencies to be irresponsible and undependable (Hare, 1994; Paulhus & Williams, 2002). Having a means to predict these types of traits is of notable consequence given their ability to adversely impact the productivity, efficient functioning, retention of talent and general success of organizations (Boddy, 2006, 2010; Gruys & Sackett, 2003; Mathieu & Babiak, 2016).

In a CAF study evaluating the validity of both measures, the Cautiousness and Irresponsibility scales respectively explained incremental variance over the TSD-Integrity in predicting self-reported CWB (Darr, 2019). Though assessing the incremental validity of these scales was outside the scope of this study, they were both found to be important significant predictors of CWB (closely related to integrity) in a completed relative weight analysis. After their research, the CAF concluded that the Cautiousness and Irresponsibility scales could augment the TSD-Integrity in a tandem approach to assess applicant integrity, however, due to some constraints restricting their immediate implementation, they stated that "efforts may be directed at developing a scenario-based integrity assessment" that evaluates ethical risk factors

(Darr, 2019, p. 32). Considering that the CRT-WP significantly correlated with these measures and offers situational based questions which assess behaviours that are negatively associated with ethical decision making (Boddy, 2014; Neo et al., 2018), the CRT-WP shows some potential to address certain gaps identified by the CAF in their pursuit for an integrity measure. However, given the small effect sizes achieved between the CRT-WP and the CAF integrity scales, further research is advised before this type of implementation would be fully recommended. In particular, given the negative employee outcomes related to leaders who are higher in psychopathy, research assessing the CRT-WP's ability to predict maladaptive tendencies as well as the presence of deviant acts in more senior ranking personnel would be valuable (Babiak & Hare, 2019; Boddy, 2010, 2014). Subsequent areas of CRT-WP research for the CAF will be recommended in later sections. Nevertheless, these findings, along with the exhibited relationship between the CRT-WP and the TSD-Integrity, warrant support for the CRT-WP to be further examined for its ability to assess factors relevant to integrity.

As hypothesized, the CRT-WP also achieved a significant positive relationship with self-reported counterproductive work behaviour. This relationship was consistent with previous validation studies involving this measure as well as other CRTs (Cook & Roulin, 2021; Lebreton et al., 2020). The relationship observed between the CRT-WP and declared acts of workplace deviance ($r = .21$) in this study met, and indeed slightly exceeded, the correlation coefficient ($r = .18$) observed in previous research by Cook and Roulin (2021). The results of this study were also congruent with research assessing subclinical psychopathy, where small positive relationships were attained when the trait was evaluated against various acts of CWB (Boddy, 2014; Schilback et al., 2020; Schütte et al., 2018). For instance, similar correlations were observed in a study conducted by Schilback et al. (2020), who evaluated how primary

psychopathy (low remorse/empathy, high boldness, high social superiority) and secondary psychopathy (high impulsivity, high self-interest) related respectively to workplace deviance. This research is of relevance to the current study as the vast majority of the assessed factors within primary and secondary psychopathy are also evaluated by the CRT-WP. As such, the results showed comparable effect sizes with the current research, between both categories of psychopathy with self-reported acts of workplace deviance: primary psychopathy (CWB-I ($r =$ .19), CWB-O ($r = .17$)), secondary psychopathy (CWB-I ($r = .25$), CWB-O ($r = .30$)). Boddy (2014) also found that subclinical psychopathy was related to acts of CWB ($r = .29$). There is great value in having the ability to predict those who are more likely to conduct deviant acts as they can be screened out from the selection process, allowing organizations to limit the unfavorable outcomes suffered by employees when they are subject to CWB. Personnel exposed to workplace deviance have displayed decreased job satisfaction, commitment and motivation, and increased intention to quit and turnover (Boddy, 2014; Nielsen & Einarson, 2012).

Despite the CRT-WP being a significant predictor of self-reported workplace deviance, it was not directly associated with four of the five CWB factors (sabotage, withdrawal, production deviance, theft) which are principally focused on harmful acts against the employing organization. The CAF integrity measures were much better predictors of these behaviours, achieving small significant correlations with between two and four of the organization centric factors. The CAF integrity scales associations with general CWB were confirmed by a relative weight analysis, as they were shown to be the three most important measures in predicting deviant acts: ranking in order of TSD-Integrity, Cautiousness and Irresponsibility. The CRT-WP was the least important predictor of general CWB.

However, where the CRT-WP proved to be of increased importance was in predicting self-reported abusive acts, the primary interpersonal CWB factor contained within the workplace deviance measure. Some of the acts of abuse assessed via the CWB-C included: physical harm, embarrassing others deliberately, use of threats, obscene gestures, spreading rumours, public belittlement, passing blame to others (Spector et al., 2006). These results are consistent with studies evaluating psychopathy and CWB as the majority of research has demonstrated the relationship between the dark personality trait and harmful acts towards other people (Boddy, 2014; Neo et al., 2018; Schilback et al., 2020; Schütte et al., 2018). Literature in this area has shown those higher in psychopathy tend to exhibit more frequent acts of insensitivity, callousness (meanness), blame externalization, ruthless self-interest, social superiority (dominating acts over others) and other non-conforming behaviours (Hare, 1980; Lilienfeld et al., 2005; Patrick; 2010). There is certainly empirical support showing the link between psychopathy and organization focused CWB (Blickle & Schütte, 2017), however most studies underscore the link with person focused deviance (Boddy, 2010, 2014; Schütte et al., 2018).

This finding is of particular interest as it relates to the CAF integrity measures included in this study. Even though the TSD-Integrity, Cautiousness and Irresponsibility scales were significant and important predictors of general CWB, this was not necessarily the case for abusive acts. In a completed hierarchical regression, where the CAF measures were first entered into the model followed by the CRT-WP, neither the TSD-Integrity nor the Irresponsibility scale were significant predictors of abuse in either step of the regression. When CRT-WP was entered into the model, it explained incremental variance (2.6%) over the CAF measures in predicting self-reported abusive acts and was shown to be the second most important predictor of these behaviours, only behind the Cautiousness scale via a relative weight analysis. Despite the

Cautiousness measure being deemed the most important predictor of abuse, it may not be viable for the CAF as this scale comes from a publicly available personality inventory (IPIP; Goldberg et al., 2006). Given this access, the CAF may have some reservations integrating this measure into its assessment processes because if recognized and advertised by an applicant, it could compromise an aspect of the organization's selection model. Also pertinent, when the Cautiousness scale was first explored by the CAF, there were issues identified (specific details not reported) which restricted it from being utilized within the organization (Darr, 2019). Therefore, the CRT-WP's ability to predict abusive acts could be of heightened relevance for the Canadian Military because of the problematic conduct identified within their ranks in recent years (i.e. harassment, abuse of power, demeaning behaviour) (Brewster, 2021).

It could be argued that implementing a measure into a selection model that only explains two to three percent of incremental variance in disclosed abusive acts over and above other available self-report measures, may not be worth the time and money required to effect such a change. This point could be strengthened given that the CRT-WP takes approximately 20 minutes to complete, a longer administration time than the other CAF measures under development (see Appendix N). However, based on the adverse impacts that abusive behaviours can have on an organization, it is contested that an extra twenty minutes may be a small price to pay to avoid any additional degree of these negative outcomes. From a well-being perspective, employees experiencing abusive acts, such as bullying, harassment, and intimidation have suffered substantial negative personal effects such as mental (depression, anxiety) and physical health (somatic) issues, as well as elevated amounts of stress, burnout and strain (Boddy, 2014; Nielsen & Einarson, 2012). Employees under an abusive leader also have lower job and life satisfaction, are less committed to their employer and experience higher levels of work-family

conflict (Babiak & Hare, 2019). Financially, a US based study found that $23.8 billion was lost by companies annually due to productivity shortfalls, absenteeism and cost associated with health care, in relation to the consequences of abuse and abusive leadership in the workplace (Babiak & Hare, 2019; Tepper et al., 2006).

While two to three percent of incremental variance in predicting abusive behaviour may not seem of obvious consequence, when considering the potential serious harm employees can suffer, even small degrees of additional ability to avoid such outcomes could yield great value for organizations. Small increases in predictive validity have also been shown to be of substantial importance as they pertain to studies evaluating factors that influence individual health and well-being (Bergenwall et al., 2014). For example, research conducted by Bergenwall and colleagues identified specific employment conditions for youth which led to increased smoking and intentions to smoke. Given the destructive effects of cigarette use, it would be hard to argue that further knowledge which could be used to limit underage smoking would be of negligible worth. Relating that example to this study, any subsequent protection that an organization could offer against the toxic consequences of abusive employees should be deemed of interest.

Even a small amount of incremental variance to predict (or screen out) abusive behaviours could have a large impact for the CAF. In recent years, the Canadian Military has received between 55000 and 60000 applications and has enrolled approximately 5000 new members annually (DND, 2021). Considering this volume, a small improvement in predictive validity of abusive behaviours could go a long way in reducing the effects of misconduct from its ranks. This is especially true due to the hierarchical structure of the CAF, in that one abusive person could reach a position to have influence over hundreds, or potentially thousands, of people. Moreover, given the recent evidence of wrongdoing amongst its senior ranks and the

pressure that military leadership is receiving from the federal government to improve its culture, the CAF may want to exhaust every effort to reduce the presence of abusive leaders throughout its operational framework, and therefore accept some added processing time of its applicants.

Despite support being demonstrated for four of the seven proposed hypotheses, no significant relationships were observed between the CRT-WP and any of the supervisor-reported outcomes. The non-significant relationship between the CRT-WP and subordinate workplace deviance, as assessed by supervisors, was of particular interest as many participants had willingly declared that they had carried out many of these acts.

There are a number of contributing factors that could help explain this non-association. The first factor which could have influenced these results relates to differences in those who consented to have their performance evaluated and those who did not. Of the 615 individuals who completed the Time 1 measures (CRT-WP and CAF integrity measures), only 340 (55%) consented to have their supervisor involved in the study. Noting the sizable portion of the sample who did not allow their supervisor to participate, post-hoc analyses were conducted to explore if there were significant differences in CRT-WP and CAF integrity measure scores between these groups. The results of conducted t-tests showed that those who did not consent to have their supervisor participate in the study displayed significantly higher subclinical psychopathy and irresponsibility scores as well as lower integrity scores (via TSD-Integrity), than those who did give consent. The groups did not differ significantly in levels of cautiousness. Given that those who did not consent to supervisor involvement scored less favorably in three of the four measures than the other group, perhaps they opted not to have their performance evaluated to avoid receiving adverse ratings (more reported acts of CWB). Conversely, those who did consent and scored more favourably may be stronger performers, and less concerned with having their

conduct reviewed. It is acknowledged that the effect sizes of the significant differences were small so this observation would likely not completely explain the non-association.

Nevertheless, the significant differences in test scores indicate a level of strategic, and potentially self-serving, degrees of participation that could help explain the non-significant relationship between the CRT-WP and observer-report CWB. To emphasize the point, those higher in psychopathy and irresponsibility as well as lower in integrity, may be more likely to conduct deviant acts because they are less concerned with doing the 'right' thing or able to control their impulsive actions, providing supervisors more of an opportunity to observe these behaviors (Paulhus & Williams, 2002; Schütte et al., 2018). By opting out of the supervisor assessment portion, these individuals were unable to be a part of the analysis, therefore not considered in the relationship between the CRT-WP and observer-report CWB. It was also interesting that supervisor-rated CWB did not correlate with the CAF integrity measures, so there is a potential that the strategic participation impacted the relationships with all Time 1 scales.

A second contributing reason for the non-significant relationship between the CRT-WP and supervisor-rated CWB may be found in the results of the O'Boyle and colleagues (2012) meta-analysis which analyzed the relationship between the Dark Triad and workplace behaviour. It was found that psychopathy had the weakest relationship with CWB compared with either narcissism or Machiavellianism. This comparison is particularly applicable because the relationship found between psychopathy and CWB ($r = .06$) in that study, was extremely similar to the correlation seen with supervisor-rated work deviance in this current research ($r = .07$, n.s.). Though O'Boyle et al. (2012) established a significant relationship, excessive power could have been a contributing factor as the sample used to assess this association was $N = 6058$ (p. 569). Nonetheless, the authors believed that the weak relationship between psychopathy and CWB

could be the result of a large portion of their sample working in positions of authority (i.e. police, military, security). They suggested that those who are higher in psychopathy and work in positions of power, may be better able to control their impulsivity and anti-social behaviour thus enabling them to progress higher within their organization. O'Boyle and colleagues explained that a certain segment of these individuals may be able to not engage in typical CWB but express their antisocial tendencies in ways that may not be as obvious to the average supervisor (i.e. a policeman who provokes a suspect into a situation where heightened force is warranted). This theory is in line with the kind of corporate psychopath portrayed by Babiak and Hare (2019). In their book, *Snakes in Suits: When Psychopaths go to Work,* they use the literature to explain how individuals higher in psychopathy use their ruthless self-interest to manipulate co-workers and superiors in order to achieve their personal agenda, while concurrently attaining higher levels of recognition, influence and success.

A third factor which could have influenced the non-association between the CRT-WP and observer-report CWB, pertains to the supervisor/subordinate dynamic in a military environment. Within a hierarchical structure, like the chain of command utilized within the CAF, junior members often spend the majority of their time with colleagues of their own (or comparable) rank and authority. This is likely where the majority of acts of workplace deviance occur, as there would be serious consequences for junior personnel who attempt to misbehave in front of a superior service member. In the same vein, it would be very unlikely that a subordinate would attempt to physically or verbally abuse their superior, as this conduct could lead to severe repercussions, including substantial financial penalties and potential temporary imprisonment (NDA, 1985). From an administrative level, supervisors are responsible for evaluating the performance of their subordinates, and as these ratings are critically important to

recommendations for promotion, career coursing and other aspects of progression, subordinates may strive to be on their best behaviour when they are in the presence of their superiors. Granted, in any employment context, employees would likely aim to have their supervisor view them favourably given the influence they have over their career. However, within the CAF, this dynamic may be amplified due to the powers of punishment at the disposal of senior personnel via the military justice system, which would not pertain to a typical work setting (NDA, 1985). This reasoning may also help explain why self-report and observer report acts of CWB did not correlate within this study ($r = .10$, n.s.), and could suggest that supervisors are not privy to the entirety, or even a substantial portion, of the deviant acts carried out by their subordinates.

The second observer-report criterion that was found not significantly related to the CRT-WP was organizational citizenship behaviour, or voluntary helping behaviours in the workplace (Organ, 1988). In research evaluating the connection between psychopathy and OCB, it was found those higher in the antisocial attribute demonstrated fewer helping behaviours because of their decreased sense of social responsibility and support for others (Spain et al., 2014). As such, it was hypothesized that there would be a negative association between the two factors as those higher in psychopathy are typically motivated by their own personal gain, as opposed to the benefit of others (Webster & Smith, 2019). Notwithstanding the relationship being supported by the literature, this result was not observed in this study.

The unfounded relationship between psychopathy and OCB could have been exacerbated by the supervisor/subordinate dynamic previously explained. Since junior military members spend the majority of their time with colleagues of their own, or similar, rank, there is a strong possibility that many of these behaviours would be more visible at the peer level. Some examples of these kinds of acts are, "lent a compassionate ear when someone had a work problem", or

"offered suggestions to improve how work is done" (Fox et al., 2012). Many of the actions listed in the OCB-C could occur in more informal settings where supervisors are not present (see Appendix M). This issue would be intensified in remote work settings that were frequently used during the recent pandemic, where employees spent a substantial amount of time absent from the workplace and away from the supervision of their superiors. Though no direct feedback was given to suggest that the study was impacted by remote work restrictions, some military bases were still adhering to minimum personnel postures during the observation period of this research.

The unsupported link between OCB and psychopathy could also be partially attributed to the typical work environment of the sample population. To reiterate, the sample population consisted of junior RCAF personnel primarily employed in occupations that support air operations and the maintenance of aircraft or military bases. This means that much of the sample work in very specialized environments, such as onboard helicopters or on active tarmacs. Given their unique type of work, some of the items within the OCB scale may not have been directly applicable and therefore not easily observable. Some examples of these items are "took phone messages for [an] absent or busy co-worker" or "decorated, straightened up, or otherwise beautified common workspace" (Fox et al., 2012). Generally, the items within the scale would be applicable to any work environment and therefore a fitting measure for this research, however it is possible that specific less applicable items influenced the predicted relationships.

Furthermore, a non-association was also observed between the CRT-WP and the third observer-report criterion, transformational leadership. Based on the findings of previous research, it was predicted that those higher in psychopathy would display less transformational leadership behaviour as these individuals are more self-centered, insensitive and less empathetic, supportive and dependable (Hare & Neumann, 2008). The general disposition of those higher in

psychopathy goes against the core premise of transformational leadership which is to motivate and inspire others to be better, as they are primarily focused on actions that will benefit themselves (Mathieu et al., 2015). However, similar to supervisor reported CWB and OCB, the empirically supported association between psychopathy and transformational leadership was not reflected in this research. Many of the reasons listed to help explain the non-significant relationships between supervisor assessed CWB and OCB would likely pertain to this non-association as well (i.e. strategic participation, lack of opportunity to assess, unique work-settings/remote work), however an additional reason could also help clarify this result.

Based on the service agreement approved by the CAF, RCAF personnel of the ranks of corporal and master corporal were authorized to partake in the study. Of those individuals who were evaluated by their supervisor, 51.1% ($n = 110$) of participants were corporals. This sizable percentage (slight majority) is of relevance as military members are not assigned to a formal leadership role until they achieve the rank of master-corporal, the rank level immediately above corporal. In practical terms, as a matter of their employment, corporals are not expected to exhibit high levels of leadership behaviours as they are required to respond to orders more frequently than they would give them. To develop their subordinates, supervisors are encouraged to assign their junior members (i.e. corporals and below) tasks which may expose them to informal leadership opportunities, however this type of situation would be secondary to their core duties as operators, technicians, and labourers. Therefore, because a sizable portion of the participants were not in positions where leadership behaviours would be expected, this likely decreased the opportunity for their supervisors to assess these types of behaviours.

Finally, as a part of the observer report analysis, it was noted that a notable number of supervisors, or 30 of 215 (14%), had failed the attention checks integrated within their research

materials, compared with only 6% (19/311) of participants. Though these individuals were excluded from the analysis, perhaps this larger percentage of inattentive supervisors suggests that on average, less effort was exerted into the evaluations compared with other aspects of the study. This point would pertain to all of the relationships between the Time 1 measures and supervisor report criteria. In evaluating the correlations in Table 2, there is evidence to support this theory as only two of the four included Time 1 measures significantly related to the supervisor reports (TSD Integrity with Leadership, Irresponsibility with Leadership and OCB). This is a curious result as the TSD-Integrity and the Cautiousness scales, which are heavily based on factors (Conscientiousness, Agreeableness) that have been shown to positively relate to OCB (Bourdage et al., 2012; Pletzer et al., 2021) and negatively relate to CWB (Ones & Viswesvaran, 2001). To stress the viewpoint, it is not being suggested that less attentive supervisor ratings substantially impacted the data but along with the other explanations for the non-associations between the CRT-WP and observer-report CWB, OCB or leadership, less attentive responses may have played a role in the null findings.

When the observer-report outcomes were assessed, it was noted that 42 supervisors had been responsible for their subordinate for a period no more than six months, most of whom had less than the evaluation period across the CWB, OCB, and transformational leadership measures. This point was of concern, as it was believed that these individuals would not have the requisite knowledge to adequately evaluate the criteria, potentially leading to inaccurate assessments. With this risk in mind, a series of regression analyses were carried out to determine if the supervision period between a superior and subordinate would moderate the respective relationship between the CRT-WP and the observer-report outcomes. All the analyses were non-

significant, showing that the supervision period did not moderate these associations. This gave

further support for the non-associations between the CRT-WP and supervisor-level criteria.

To further investigate the impact of supervision period on the relationship between the

CRT-WP and observer report outcomes, the 'inexperienced supervisors' were excluded, and

bivariate correlations were re-calculated. Though no changes were found in the links between the

CRT-WP and CWB or OCB when only more experienced supervisors were included, a small

negative correlation resulted with transformational leadership. This finding is not meant to refute

the resultant non-association between the CRT-WP and transformational leadership when the

entire eligible sample population was analyzed as this review was only exploratory in nature.

That said, given a significant relationship did result between the CRT-WP and transformational

leadership when more experienced supervisors were considered, further research is likely

warranted to better understand this dynamic.

Theoretical and Practical Implications

Relating to dark personality, those higher in psychopathy have displayed higher levels of

Conscientiousness (C), Agreeableness (A) and Emotional Stability (ES) (Lee & Ashton, 2005;

Paulhus & Williams, 2002) as well as to exhibit decreased cautiousness and increased

irresponsibility, through acts of impulsivity and self-interest (Hare, 1994; Paulhus & Williams,

2002). As hypothesized, participant CRT-WP scores significantly related in the expected

direction with three personality measures being explored in the CAF to assess integrity:

negatively with the TSD-Integrity (via C, A and ES) and with the Cautiousness scale (facet of C)

whereas, positively with the Irresponsibility scale. This strengthens the construct validity of the

CRT-WP, or at a minimum expands the nomological network of the measure, because

participants who were higher in psychopathy displayed both personality and behavioural tendencies associated with the dark personality trait.

From a criterion validity standpoint, the CRT-WP, once again, was able to predict acts of CWB, but when assessing these behaviours at the factor level, was only associated with interpersonal acts of workplace deviance, more specifically, abusive conduct (Cook & Roulin, 2021). This result does contradict some previous findings evaluating dark personality and CWB-O (Blickle & Schütte, 2017), however agrees with the overwhelming majority of studies that show higher levels of psychopathy tend to lead to more frequent harmful behaviour towards other individuals (Boddy, 2010, 2014; Schütte et al., 2018). This builds on the extant evidence of the CRT-WP because it is the first time the measure has been evaluated for its ability to predict specific acts of workplace deviance. Also at the centre of this work, this study marks the first time that the CRT-WP has been evaluated within a functional workplace setting whereas all other research has been facilitated online, using subjects from a variety of occupations and industries (Cook & Roulin, 2021). As such, these findings expand the understanding of the behaviours the CRT-WP may help predict as well as where it may predict them.

In practical terms, this research could support the CAF in their pursuit for an integrity measure which can be further evaluated for its viability to be used within their assessment and selection processes, to screen out applicants who display problematic conduct and beliefs. Recent research within the CAF has explored the capability of the TSD-Integrity, Cautiousness, and Irresponsibility scales for their ability to predict factors associated with integrity (Darr, 2019). However, as all of these personality scales are explicit self-report measures which may be susceptible to the detrimental effects of impression management, the use of these tools could lead to increased false-positive assessments (Lilienfeld et al., 1995). As previously explained,

this vulnerability is of relevance as the TSD-Integrity was able to be manipulated in a research setting, yet this was not the case for the CRT-WP (Cook & Roulin, 2021). Within the current research, both the CRT-WP and the CAF integrity measures were shown to be significant predictors of general CWB. Even though the CRT-WP accounted for incremental variance over the CAF integrity measures in predicting general CWB and abuse, the CAF scales were the most important predictors of workplace deviance. Nevertheless, of the CAF measures, only the Cautiousness scale was able to predict self-reported abusive acts, when all scales were entered into a regression model. In comparative terms, the CRT-WP was quite effective in predicting participant declared abusive acts and was viewed to be the second most important measure in doing so, of those that were assessed in this study.

Furthermore, the intercorrelations between the CAF integrity measures were notably high, relative to the intercorrelations with the CRT-WP. This finding suggests that the three measures could be more similar (i.e. redundant) in what they assess, compared with the CRT-WP. For example, the TSD-Integrity related to most organization centric CWB (exception theft) but was a non-significant predictor of abuse, when the other measures were entered into the model. These issues are compounded with the fact that there are some constraints currently impeding the CAF from incorporating the Cautiousness and Irresponsibility scales into their selection framework (Darr, 2019). This is especially true as the most important predictor of abuse, the Cautiousness scale, comes from a readily available personality inventory (IPIP; Goldberg et al., 2006). Having a portion of the CAF selection model accessible to the public could exacerbate the concerns of faking within self-report explicit measures of personality, if applicants understand why a certain scale is being used. Given the implementation challenges related to the CAF integrity measures under development, the CRT-WP correlated with all three

measures and was able to predict different relevant outcomes, it may be advisable for the Canadian Military to pursue additional research to evaluate if the CRT-WP could provide further robustness to their selection processes.

Though the focus of this research was the Canadian Military, the results of this study are applicable to other employment sectors and hiring procedures. Explicit self-report measures are widely used within various selection settings and as such, the impacts of impression management and faking are wide reaching (Donovan et al., 2014). Even though assessment professionals have been reluctant to incorporate implicit assessment tools given their increased administration time and bias related to test evaluators (Beer & Watson, 2008; Murphy, 1989), the CRT-WP addresses many of these concerns given its standardized scoring key and reasonable administration time (approx. 18-22 mins). Considering that the construct and criterion validities of the measure are expanding, more employers should start exploring the CRT-WP for potential use when screening applicants. In keeping with the recommendations of Cook and Roulin (2021), as the CRT-WP requires more time to complete than some valid selection tools, it may not be warranted in the assessment of every employee. However, in professions of power and trust (executive-level, business, military, and police), the CRT-WP could provide better insight into the quality of a particular hire, compared with evaluations that are currently in use. Yet, as the CRT-WP is a relatively new measure of subclinical psychopathy, subsequent validation studies are advised before the tool is used in processes which may impact hiring decisions.

Limitations and Future Research

Through the two time points and supervisor ratings, this research was impacted by a notable level of attrition as the study progressed. To highlight the issue, 615 participants completed the Time 1 measures but only 139 (22.6%) completed every aspect of the study.

Participant attrition was most prominent in the group of individuals who completed the CRT-WP but did not agree to have their supervisor evaluate their performance ($n = 275$, 44.7%). A level of attrition was certainly expected however factors directly relevant to this research setting may have further increased these numbers. When research is supported by the Canadian Military, incentives of any kind (i.e. monetary) are not authorized for use. Therefore, researchers must rely on the continued interest and dedication of the sample population if a study requires participation at subsequent times. This matter can also be compounded as CAF members typically have a high work tempo which may require them to be away from their normal place of work at a moment's notice. Having the ability to provide a form of research incentive could encourage less dedicated or available participants to re-engage with a study.

Although the research achieved the required number of participants at every stage, substantial attrition was also observed during the subordinate performance evaluation component of the study (125/340 supervisors did not respond, 36.7%). Aside from lacking the ability to offer incentives, this issue was likely intensified by the time of year the data collection occurred. The data collection commenced near the end of the fiscal year, a period when many military members are occupied with year-end performance and financial reporting or are away from the workplace, expending unused vacation time. It should be emphasized that many supervisors were very generous with their time to support the study upon receiving their invitation, however there may have been a sizeable percentage of individuals who were unable to partake because they were involved in competing priorities or out of the office. If similar research is done in the future, options to bolster participation, such as through permittable and creative incentives or more convenient research scheduling, should be pursued.

Given the similar assessment structure of measures used within this study, the resultant findings may have been subjected to influences of common-method variance (CMV). Specific assessments included in this research, such as the TSD-Integrity, Cautiousness, Irresponsibility, CWB-C, SV CWB-C and OCB-C, utilize explicit self-reporting via similar Likert scales to evaluate their criterion. When data are collected in a comparable manner across criteria, systematic error variance may be introduced into the results, leading to overly inflated or deflated correlations between measures (Williams & Brown, 1994). Adhering to recommendations from the literature, steps were taken to mitigate the influences of CMV by implementing time separation between measure completion (14 days between Time 1 and Time 2) and incorporating observer report ratings (Jordan & Troth, 2020; Podsakoff et al., 2003). Despite measures being taken to decrease its influence, CMV could have still impacted specific aspects of the results disproportionately. To further use multi-source data collection to mitigate CMV in research involving the military, assessing participant behaviour through yearly performance appraisals, training reports, formal commendations or reprimands contained within personnel files could be another viable option. This type of methodology may be challenging logistically speaking but could offer more objective insight into an individual's conduct history. This point both highlights a limitation of this study and an area for additional research.

It should be accentuated that the resultant correlations which were observed between the CRT-WP and the assessed criteria were of small effect size. Even though the observed effect sizes are consistent with previous research (James & Lebreton, 2012; Schilback et al., 2020) and may prove to be of particular value for organizations (Bergenwall et al., 2014), they alone do not suggest that the CRT-WP is ready for immediate use within organizations at this time. As the CRT-WP is a new implicit measure of workplace psychopathy, further validation studies, such as

those suggested below, are recommended to better understand the assessment's predictive validity before it is employed in a selection environment.

Future work to validate the CRT-WP should look for opportunities to assess workplace deviance as well as more severe acts of misconduct (including criminal activity) by using more verifiable means. This approach could help determine if the measure can screen for people who are more prone to egregious harmful behaviours, thus facilitating an opportunity to assess the predictive validity of the CRT-WP. Directly building on the findings of this research, further validation studies should also be facilitated with the goal to better understand the relationships between the CRT-WP and observer-report CWB, OCB and transformational leadership, as the resultant non-associations contradicted established relationships within the literature. This kind of study should strive to utilize methods which will increase the likelihood that the evaluated behaviours are more easily observable by participating supervisors. Finally, successive research, especially within the CAF, should aim to utilize more senior ranking individuals (i.e. management) in order to understand if the CRT-WP can predict maladaptive traits and behaviours within higher echelons of organizations.

Notwithstanding that the CRT-WP has achieved suitable levels of reliability at the scale and factor levels (Cook & Roulin, 2021), factor 1 of the measure, which assesses Individual-Oriented Psychopathy (own thoughts and behaviours), did not reach a sufficient threshold in this study. Within any particular CRT item, it is recommended that the cumulative percentage that the two illogical response options are selected should not exceed 5% (James, 1998; James & McIntyre, 2000). If illogical responses are selected in a manner exceeding the 5% benchmark, it could indicate poor structure of a CRT-item. In responding to three items within the Individual-Oriented Psychopathy factor, participants selected the illogical responses more frequently than is

advised. Illogical responses were chosen disproportionately in the following items:

Externalization 10 (9.2%), Carefree Impulsivity 6 (13.7%) and Social Superiority 9 (6.5%). To

further strengthen the psychometric properties of the CRT-WP, research should be conducted to

determine if these test items are problematic, and if so, how they could be improved.

Conclusion

The findings of this study expand on the encouraging results of other CRT-WP focused

research (Cook & Roulin, 2021) and further respond to calls from the literature for a measure of

psychopathy which is effective and feasible in selection settings (Lilienfeld et al., 2015).

Previous research has displayed that the CRT-WP is a reliable implicit measure of subclinical

psychopathy which can predict pertinent workplace behaviours while being robust against

impression management (Cook & Roulin, 2021). Revealing more potential, the results of this

study shed additional light on the construct and criterion validities of the CRT-WP and provide

empirical evidence that it can predict additional performance outcomes, and in some cases, do so

more successfully than other evaluations under development.

Specifically, the CRT-WP related with personality and behavioural factors relevant to

integrity which were aligned with tendencies typically observed in those higher in psychopathy.

The workplace psychopathy measure was also able to predict acts of counterproductive work

behaviour and abuse. Most notably the CRT-WP displayed incremental validity over integrity

measures being investigated within the Canadian Military, in assessing workplace deviance and

abuse and was found to be an important contributor in predicting abusive workplace behaviours.

The results of this study give more support for the CRT-WP's viability in selection settings as

this implicit measure has shown promise to predict abusive acts, conduct associated with many

detrimental impacts for employees.

References

Allen, T. D., Barnard, S., Rush, M. C., & Russell, J. E. A. (2000). Ratings of organizational
citizenship behavior: Does the source make a difference? *Human Resources Management
Review*, *10*(1), 97–114. https://doi.org/10.1016/S1053-4822(99)00041-8

Alliger, G. M., & Dwight, S. A. (2000). A meta-analytic investigation of the susceptibility of
integrity tests to response distortion. *Educational and Psychological Measurement*, *60*,
59–72. https://doi.org/10.1177/0013164002197036

Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., & McKee, M. C. (2007).
Transformational leadership and psychological well-being: The mediating role of
meaningful work. *Journal of Occupational Health Psychology*, *12*, 193-203.
https://doi.org/10.1037/1076-8998.12.3.193

Ashton, M., & Lee, K. (2008). The prediction of Honesty–Humility-related criteria by the
HEXACO and Five-Factor Models of personality. *Journal of Research in
Personality, 42*(5), 1216-1228. https://doi.org/10.1016/j.jrp.2008.03.006

Avolio, B. J., & Bass, B. M. (2004). *Multifactor leadership questionnaire: Manual and sampler
set*. Menlo Park, CA: Mind Garden

Babiak, P. (1995). When psychopaths go to work: A case study of an industrial psychopath.
Applied Psychology: An International Review, *44*(2), 171–188.
https://doi.org/10.1111/j.1464-0597.1995.tb01073.x

Babiak, P., & Hare, R. D. (2019). *Snakes in suits: When psychopaths go to work (1st ed.)*. New
York: Regan Books.

Babiak, P., Neumann, C. S., & Hare, R. D. (2010). Corporate psychopathy: Talking the walk.
Behavioral Sciences & the Law, *28*(2), 174–193. http://dx.doi.org/10.1002/bsl.925

Bateman, T., & Organ, D. (1983). Job satisfaction and the good soldier: The relationship between affect and employee "citizenship". *Academy of Management Journal, 26*(4), 587-595. https://doi.org/10.2307/255908

Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York, NY: Free Press.

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next?. *International Journal of Selection and assessment, 9*(1-2), 9-30. https://doi.org/10.111/1468-2389.00160

Baysinger, M. A., Scherer, K. T., & LeBreton, J. M. (2014). Exploring the disruptive effects of psychopathy and aggression on group processes and group effectiveness. *Journal of Applied Psychology*, *99*(1), 48-65. https://doi.org/10.1037/a0034317

Beer, A., & Watson, D. (2008). Personality judgment at zero acquaintance: Agreement, assumed similarity, and implicit simplicity. *Journal of Personality Assessment, 90*(3), 250-260. http://doi.org/10.1080/00223890701884970

Bergenwall, A. L., Kelloway, E. K., & Barling, J. (2014). Odd jobs, bad habits, and ethical implications: Smoking-related outcomes of children's early employment intensity. *Journal of Business Ethics, 122*(2), 269–282. https://doi.org/10.1007/s10551-013-1743-x

Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology, 92(2)*, 410-424. https://doi.org/10.1037/0021-9010.92.2.410

Berry, C. M., Sackett, P. R., & Tobares, V. (2010). A meta-analysis of conditional reasoning

tests of aggression. *Personnel Psychology*, *63*, 361–384. https://doi.org/10.1111/j.1744-6570.2010.01173.x

Bing, M. N., LeBreton, J. M., Davison, H. K., Migetz, D. Z, & James, L. R. (2007). Integrating implicit and explicit social cognitions for enhanced personality assessment: A general framework for choosing measurement and statistical methods. *Organizational Research Methods*, *10*, 346-389. https://doi.org/10.1177/1094428107301148

Bissett, K. (2016, November 21). Women in Canadian military subjected to harassment, discrimination, suit alleges. *The Canadian Broadcasting Corporation*. Retrieved from http://www.cbc.ca/news/canada/nova-scotia/proposed-lawsuit-alleges-discrimination-bullying-in-canadian-armed-forces-1.3861109

Bjørnebekk, G., & Gjesme, T. (2009). Future time orientation and temperament: Exploration of their relationship to primary and secondary psychopathy. Psychological Reports, *105*(1), 275–292. https://doi.org/10. 2466/PR0.105.1.275-292

Blickle, G., & Schütte, N. (2017). Trait psychopathy, task performance, and counterproductive work behavior directed toward the organization. *Personality and Individual Differences*, *109*, 225–231. https://doi.org/10.1016/j.paid.2017.01.006

Boddy, C. R. P. (2006). The dark side of management decisions: Organisational psychopaths. *Management Decision*, *44*, 1461-1475. https://doi.org/10.1108/00251740610715759

Boddy, C. R. P. (2010). Corporate Psychopaths and organizational type. *Journal of Public Affairs*, *10*, 300–312. https://doi.org/10.1002/pa.365

Boddy, C. R. P. (2014). Corporate psychopaths, conflict, employee affective well-being, and counterproductive work behaviour. *Journal of Business Ethics*, *121*, 107–121. https://doi.org/10.1007/s10551-013-1688-0

Boddy, C. (2017). Psychopathic leadership a case study of a corporate psychopath CEO. *Journal of Business Ethics, 145*(1), 141-156. https://doi.org/10.1007/s10551-015-2908-6

Bornstein, R. (2002). A process dissociation approach to objective-projective test score interrelationships. *Journal of Personality Assessment, 78*(1), 47-68. https://doi.org/10.1207/S15327752JPA7801_04

Bourdage, Lee, K., Lee, J. H., & Shin, K. H. (2012). Motives for Organizational Citizenship Behavior: Personality Correlates and Coworker Ratings of OCB. *Human Performance*, *25*(3), 179–200. https://doi.org/10.1080/08959285.2012.683904

Boyes, F. A. J. (2005). *Personality as a predictor of performance and counterproductive behaviour* (Unpublished master's thesis). Saint Mary's University, Halifax, Nova Scotia.

Brewster, M. (2021, March 21). Parts of Canada's military culture permit 'racism discrimination, harassment,' says acting chief. *The Canadian Broadcasting Corporation*. Retrieved from https://www.cbc.ca/news/politics/wayne-eyre-sexual-misconduct-canadian-armed-forces-1.5946717

Brewster, M. (2021, April 29). Military recorded more than 500 sexual assault reports during five-year effort to stamp out misconduct. *The Canadian Broadcasting Corporation*. Retrieved from https://www.cbc.ca/news/politics/canadian-forces-sexual-assault-misconduct-operation-honour-1.6006290

Burke, A., & Brewster, M (2021, October 22). A military in crisis: Here are the senior leaders embroiled in sexual misconduct cases. *The Canadian Broadcasting Corporation*. Retrieved from https://www.cbc.ca/news/politics/sexual-misconduct-military-senior-leaders-dnd-caf-1.6218683

Burns, G. N., & Christiansen, N. D. (2011). Methods of measuring faking behavior. *Human

Performance, *24*, 358–372. https://doi.org/10.1080/08959285.2011.597473

Burns, J. M. (1978). *Leadership*. New York, NY: Harper & Row

Canadian Centre on Substance Use and Addiction. (2019). Alcohol – Canadian Drug Summary. Ottawa: CCSUA. https://www.ccsa.ca/sites/default/files/2019-09/CCSA-Canadian-Drug-Summary-Alcohol-2019-en.pdf

Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, *14*(3), 389–405. https://doi.org/10.1023/A:1022991115523

Catano, V.M., Wiesner, W.H., & Hackett, R.D. (2016). *Recruitment and selection in Canada, 6th ed*. Toronto, ON: Nelson Education. https://doi.org/10.7202/1039600a

Catano, V. M., O'Keefe, D. F., Francis, R. E., & Owens, S. M. (2018). Construct-based approach to developing a short, personality-based measure of integrity. *International Journal of Selection and Assessment*, *26*, 75–92. https://doi.org/10.1111/ijsa.12197

Cheang, H. S., & Appelbaum, S. H. (2015a). Corporate psychopathy: Deviant workplace behaviour and toxic leaders – part one. *Industrial and Commercial Training*, *47*(4), 165–173. https://doi.org/10.1108/ICT-12-2013-0086

Cheang, H. S., & Appelbaum, S. H. (2015b). Corporate psychopathy: Deviant workplace behaviour and toxic leaders (part two). *Industrial and Commercial Training*, *47*(5), 236–243. https://doi.org/10.1108/ICT-12-2013-0087

Cleckley, H. M. 1988. The mask of sanity. St. Louis, MO: Mosby. (Original work published 1941)

Cohen, A. (2016). Are they among us? A conceptual framework of the relationship between the dark triad personality and counterproductive work behaviors (CWBs). *Human Resources*

Management Review, *26*, 69–85. https://doi.org/10.1016/j.hrmr.2015.07.003

Cook, R., & Roulin, N. (2021). *Screening for snakes in suits: Development and validation of the Conditional Reasoning Test for Workplace Psychopath (CRT-WP).* (Unpublished manuscript). Saint Mary's University, Halifax, Nova Scotia.

Crocker, L & Algima, L. (1986). *Introduction to classical and modern test theory*. Ohio: Cengage Learning.

Darr, W. (2009). *The Trait Self Descriptive (TSD) Inventory*: *A facet level examination*. Technical memorandum 2009-010. Ottawa, Canada: Director General Military Personnel Research and Analysis.

Darr, W. (2019). *Identifying integrity-relevant predictors* (DRDC-RDDC-2019-R154) Ottawa, Canada: Director General Military Personnel Research and Analysis.

Department of National Defence. (2015). *Canadian armed forces recruiting strategic level guidance: an evolving landscape.* Ottawa, ON: Canadian Forces Recruiting Group.

Department of National Defence. (2003). *Duty with honour*. Ottawa, ON: Canadian Defence Academy – Canadian Forces Leadership Institute. Retrieved from https://www.canada.ca/en/department-national-defence/corporate/reports-publications/duty-with-honour-2009.html

Department of National Defence. (2020). *Department of national defence and Canadian forces: Code of values and ethics*. Ottawa, ON: Defence Ethics Program. Retrieved from https://www.canada.ca/en/department-national-defence/services/benefits-military/defence-ethics/policies-publications/code-value-ethics.html

Department of National Defence. (2021). *Personnel.* Ottawa, ON. Retrieved from

https://www.canada.ca/en/department-national-defence/corporate/reports-
publications/proactive-disclosure/main-estimates-2020-2021/personnel.html

Donovan, J., Dwight, S., & Schneider, D. (2014). The impact of applicant faking on selection
measures, hiring decisions, and employee performance. *Journal of Business and
Psychology, 29*(3), 479-493. https://doi.org/10.1007/s10869-013-9318-5

Edwards, Roberts, I., Clarke, M. J., Diguiseppi, C., Wentz, R., Kwan, I., Cooper, R., Felix, L.
M., & Pratap, S. (2009). Methods to increase response to postal and electronic
questionnaires. *Cochrane Database of Systematic Reviews*, *3*, 1-38.
https://doi.org/10.1002/14651858.MR000008.pub4

Ellingson, J., Smith, D., & Sackett, P. (2001). Investigating the influence of social desirability on
personality factor structure. *Journal of Applied Psychology, 86*(1), 122-133.
https://doi.org/10.1037/0021-9010.86.1.122

Fine, S., & Gottlieb-Litvin, Y. (2013). Justifying counterproductive work behaviors and an
integrity-based conditional reasoning test: Back to the drawing board? *International
Journal of Selection and Assessment*, *21*(3), 328–333. https://doi.org/10.1111/ijsa.12042

Fisher, P. A., Robie, C., Christiansen, N. D., & Komar, S. (2018). The impact of psychopathy
and warnings on faking behavior: A multisaturation perspective. Personality and
Individual Differences, 127, 39-43. https://doi.org/10.1016/j.paid.2018.01.033

Foster, J. (2014, December 12). Navy bans drinking alcohol aboard ships at sea. *CTV News*.
Retrieved from http://www.ctvnews.ca/canada/navy-bans-drinking-alcohol-aboard-ships-
at-sea-1.2145362

Fox, S., Spector, P. E., Goh, A., Bruursema, K., & Kessler, S. (2012). The deviant citizen: Measuring potential positive relations between counterproductive work behaviour and organizational citizenship behaviour. *Journal of Occupational and Organizational Psychology*, *85*, 199–220. https://doi.org/10.1111/j.2044-8325.2011.02032

Galić, Z. (2016). Conditional Reasoning Test for Aggression: Further evidence about incremental validity. *International Journal of Selection and Assessment*, *24*(1), 24–33. https://doi.org/10.1111/ijsa.12126

Wang, G., Oh, I., Courtright, S., & Colbert, A. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management, 36*(2), 223-270. https://doi.org/10.1177/1059601111401017

Gialacone, R.A., & Greenberg, J. (1997). *Antisocial behaviour in organizations.* Thousands Oak, CA: Sage. https://doi.org/10.1108/ijm.2001.22.3.279.2

Goffin, R., Rothstein, M., & Johnston, N. (1996). Personality testing and the assessment center. *Journal of Applied Psychology, 81*(6), 746-756. http://doi.org/10.1037/0021-9010.81.6.746

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality*, *40*, 84-96. https://doi.org/10.1016/j.jrp.2005.08.007

Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology*, 79, 1022–1038. http://doi.org/10.1037/0022- 3514.79.6.1022

Gruys, M., & Sackett, P. R. (n.d.). Investigating the dimensionality of counterproductive work behavior. *International Journal of Selection and Assessment*, *11*(1), 30–42. https://doi.org/10.1111/1468-2389.00224

Hare, R. D. (1980). A research scale for the assessment of psychopathy in criminal populations. *Personality and Individual Differences*, *1*, 111-119. https://doi.org/10.1016/0191-8869(80)90028-8

Hare, R. (1994). Predators: The disturbing world of the psychopaths among us. *Psychology Today, 27*(1), 54-63. Retrieved from https://www.proquest.com/magazines/predators-disturbing-world-psychopaths-among-us/docview/214445242/se-2?accountid=13908

Hare, R. D., Hart, S. D., & Harpur, T. J. (1991). Psychopathy and the DSM-IV criteria for antisocial personality disorder. *Journal of Abnormal Psychology*, *100*(3), 391–398. https://doi.org/10.1037/0021-843X.100.3.391

Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. Annual Review of Clinical Psychology, *4*, 217–246. http://dx.doi.org/10.1146/annurev.clinpsy.3.022806.091452

Hart, S. D., Cox, D. N., & Hare, R. D. (1995). Hare psychopathy checklist: Screening version (PCL: SV). Toronto, Canada: Multi-Heath Systems.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]. Retrieved from http://www.afhayes.com/ public/process2012.pdf

Helle, A., & Mullins-Sweatt, S. (2019). Maladaptive personality trait models: Validating the five-factor model maladaptive trait measures with the personality inventory for DSM-5 and NEO Personality inventory. *Assessment (Odessa, Fla.), 26*(3), 375-385.

https://doi.org/10.1177/107319111770907

Hollinger, R. C., & Clark. J. P. (1982). Formal and informal social controls of employee deviance. *The Sociology Quarterly, 23*, 333-342. https://doi.org/10.1111/j.1533-8525.1982.tb01016.x

Honderich, T. (Ed.). (1995). The oxford companion to philosophy. New York, NY: Oxford University Press.

Hough, L., & Oswald, F. (2008). Personality testing and industrial–organizational psychology: reflections, progress, and prospects. *Industrial and Organizational Psychology, 1*(3), 272-290. https://doi.org/10.1111/j.1754-9434.2008.00048.x

Hunter, W. F. J. R. (2014). The role of integrity and personality in counterproductive work behaviour (Doctoral dissertation). Retrieved from http://scholar.sun.ac.za/handle/10019.1/86570

Hurtz, G., & Donovan, J. (2000). Personality and job performance. *Journal of Applied Psychology, 85*(6), 869-879. https://doi.org/10.1037/0021-9010.85.6.86

James, L. R. (1998). Measurement of personality via conditional reasoning. *Organizational Research Methods*, *1*(2), 131–163. https://doi.org/10.1177/109442819812001

James, L. R., & LeBreton, J. M. (2012). *Assessing the implicit personality through conditional reasoning (1st ed.)*. Washington, DC: American Psychological Association.

James, L. R., & McIntyre, M. D. (2000). Conditional reasoning test of aggression: Test manual. Innovative Assessment Technology.

James, L. R., McIntyre, M. D., Glisson, C. A., Bowler, J. L., & Mitchell, T. R. (2004). The conditional reasoning measurement system for aggression: An overview. *Human Performance*, *17*, 271-295. https://doi.org/10.1207/s15327043hup1703

Johnson, J. W. (2000). A heuristic method for estimating the relative weight of predictor

variables in multiple regression. *Multivariate Behavioral Research*, 35, 1–19.

https://doi.org/10.1207/S15327906MBR_3501_1

Jones, D., & Paulhus, D. (2014). Introducing the Short Dark Triad (SD3). *Assessment (Odessa,

Fla.), 21*(1), 28-41. https://doi.org/10.1177/1073191113514105

Jordan, P. J., & Troth, A. C. (2020). Common method bias in applied settings: The dilemma of

researching in organizations. *Australian Journal of Management, 45*(1), 3-14.

https://doi.org/10.1177/0312896219871976

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job

satisfaction: A meta-analysis. *Journal of applied psychology*, *87*(3), 530.

https://doi.org/10.1037/0021-9010.87.3.530

Katz, D. (1964). The motivational basis of organizational behavior. *Behavioral Science, 9*(2),

131-146. https://doi.org/10.1002/bs.3830090206

Kelsey, K. R. (2016). The vulnerability of self-report measures of psychopathy to positive

impression management: A simulation study with inmates. *Dissertation Abstracts

International: Section B*: *The Sciences and Engineering*, *77*. Retrieved from

https://digital.library.unt.edu/ark:/67531/metadc699932/m2/1/high_res_d/dissertation.pdf

Kelley, S. E., Edens, J. F., Donnellan, M. B., Ruchensky, J. R., Witt, E. A., & McDermott, B. E.

(2016). Development and validation of an inconsistent responding scale for an

abbreviated version of the Psychopathic Personality Inventory—Revised. *Personality and

Individual Differences*, *91*, 58-62. https://doi.org/10.1016/j.paid.2015.11.033

Kelloway, E. K. (2021). *Data Cleaning* [Video - Lecture]. Department of Psychology, Saint

Mary's University.

Kuncel, N. R., & Tellegen, A. (2009). A conceptual and empirical reexamination of the measurement of the social desirability of items: Implications for detecting desirable response style and scale development. *Personnel Psychology*, *62*, 201–228. https://doi.org/10.1111/j.1744-6570.2009.01136.x

Landay, K., Harms, P. D., & Credé, M. (2019). Shall we serve the dark lords? A meta-analytic review of psychopathy and leadership. *Journal of Applied Psychology*, *104*(1), 183–196. https://doi.org/10.1037/apl0000357

LeBreton, J. M., Binning, J. F., & Adorno, A. J. 2006. Subclinical psychopaths. In D. L. Segal & J. C. Thomas (Eds.), *Comprehensive handbook of personality and psychopathology*, vol. 1: 388-411. New York: Wiley

Lebreton, J. M., Grimaldi, E. M., & Schoen, J. L. (2020). Conditional reasoning: A review and suggestions for future test development and validation. *Organizational Research Methods*, *23*(1), 65–95. https://doi.org/10.1177/1094428118816366

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research*, *39*(2), 329–358. https://doi.org/10.1207/s15327906mbr3902_8

Lee, K., & Ashton, M. (2005). Psychopathy, machiavellianism, and narcissism in the Five-Factor Model and the HEXACO model of personality structure. *Personality and Individual Differences*, *38*(7), 1571-1582. https://doi.org/10.1016/j.paid.2004.09.016

Lee, K., Ashton, M.C., & de Vries, R. (2005). Predicting workplace delinquency and integrity with the HEXACO and five-factor models of personality structure. *Human Performance*, *18(2)*, 179-197. https://doi.org/10.1207/s15327043hup1802_4

Lilienfeld, S. O., Alliger, G., & Mitchell, K. (1995). Why integrity testing remains controversial. *American Psychologist*, *50*(6), 456-457.

Lilienfeld, S. O., Watts, A. L., & Smith, S. F. (2015). Successful psychopathy: A scientific status report. *Current Directions in Psychological Science*, *24*, 298-303. https://doi.org/10.1177/0963721415580297

Lilienfeld, S. O., & Fowler, K. A. (2006). The self-report assessment of psychopathy: Problems, pitfalls, and promises. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 107–132). The Guilford Press. https://doi.org/10.1176/ps.2007.58.3.417a

Lilienfeld, S. O., Watts, A. L., & Smith, S. F. (2015). Successful psychopathy: A scientific status report. *Current Directions in Psychological Science*, *24*, 298-303. https://doi.org/10.1177/0963721415580297

Lilienfeld, S. O., Widows, M. R., & Staff, P. A. R. (2005). Psychopathic Personality Inventory-Revised. *Social Influence (SOI)*, 61, 97.

Lim, B. C., & Ployhart, R. E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology*, *89*, 610-621. https://doi.org/10.1037/0021-9010.89.4.610

Lord, R., Day, D., Zaccaro, S., Avolio, B., & Eagly, A. (2017). Leadership in applied psychology: Three waves of theory and research. *Journal of Applied Psychology, 102*(3), 434-451. https://doi.org/10.1037/apl0000089

Mathieu, C., & Babiak, P. (2015). Tell me who you are, I'll tell you how you lead: Beyond the Full-Range Leadership model, the role of corporate psychopathy on employee attitudes. *Personality and Individual Differences, 87*, 8-12. https://doi.org/10.1016/j.paid.2015.07.016

Mathieu, C., & Babiak, P. (2016). Corporate psychopathy and abusive supervision: Their influence on employees' job satisfaction and turnover intentions. *Personality and Individual Differences*, *91*, 102–106. https://doi.org/10.1016/j.paid.2015.12.002

Mathieu, C., Neumann, C., Babiak, P., & Hare, R. (2015). Corporate Psychopathy and the Full-Range Leadership model. *Assessment (Odessa, Fla.), 22*(3), 267-278. https://doi.org/10.1177/1073191114545490

Mathieu, C., Neumann, C. S., Hare, R. D., & Babiak, P. (2014). A dark side of leadership: Corporate psychopathy and its influence on employee well-being and job satisfaction. *Personality and Individual Differences*, *59*, 83–88. https://doi.org/10.1016/j.paid.2013.11.010

Mchenry, J., Hough, L., Toquam, J., Hanson, M., & Ashworth, S. (1990). Project A validity results: The relationship between predictor and criterion domains. *Personnel Psychology, 43*(2), 335-354. https://doi.org/10.1111/j.1744-6570.1990.tb01562

Meyers, L., Gamst, G., & Guarino, A. J. (2017). *Applied multivariate research: Design and interpretation* (3th ed.). Thousand Oaks: Sage.

Murphy, K. (1993). *Honesty in the workplace (cypress series in work and science)*. Pacific Grove, Calif.: Brooks/Cole Pub

Murphy, K. R., & Jako, R. (1989). Under what conditions are observed intercorrelations greater or smaller than true intercorrelations? *Journal of Applied Psychology, 74*(5), 827-830. https://doi.org/10.1037/0021-9010.74.5.827

National Defence Act, c N-5, s. 129 (1985) Retrieved from https://laws-lois.justice.gc.ca/eng/acts/N-5/index.html

Neo, B., Sellbom, M., Smith, S. F., & Lilienfeld, S., O. (2018). Of boldness and badness:

Insights into workplace malfeasance from a Triarchic Psychopathy Model perspective. *Journal of Business Ethics*, *149*, 187–205. https://doi.org/10.1007/s10551-016-3108-8

Nielsen, K., Randall, R., Yarker, J., & Brenner, S. (2008). The effects of transformational leadership on followers' perceived work characteristics and psychological well-being: A longitudinal study. *Work and Stress, 22*(1), 16-32. https://doi.org/10.1080/02678370801979430

Nielsen, M., & Einarsen, S. (2012). Outcomes of exposure to workplace bullying: A meta-analytic review. *Work and Stress, 26*(4), 309-332. https://doi.org/10.1080/02678373.2012.734709

O'Boyle, Jr., E. H., & Forsyth, D. R. (2012). A meta-analysis of the Dark Triad and work behavior: A social exchange perspective. *Journal of Applied Psychology*, *97*(3), 557–579. https://doi.org/10.1037/a0025679

Ones, D. S. (1993). *The construct validity of integrity test* (Unpublished doctoral dissertation). University of Iowa City, Iowa City, Iowa. Retrieved from https://apps.dtic.mil/sti/pdfs/ADA293940.pdf

Ones, D., & Viswesvaran, C. (1998). The effects of social desirability and faking on personality and integrity assessment for personnel selection. *Human Performance, 11*(2), 245-269. https://doi.org/10.1207/s15327043hup1102&3_7

Ones, D. S. & Viswesvaran, C. (2001). Integrity tests and other criterion-focused occupational personality scales (COPS) used in personnel selection. *International Journal of Selection and Assessment*, *9(1-2)*, 31-39. http://doi.org/10.1111/1468-2389.00161

Ones, D., Viswesvaran, C., & Reiss, A. (1996). Role of social desirability in personality testing for personnel selection. *Journal of Applied Psychology, 81*(6), 660-679. https://doi.org/10.1037/0021-9010.81.6.660

Organ, D. W. (1988). *Organizational citizenship behavior*: *The good soldier syndrome*. Lexington, MA: Lexington Books.

Organ, D. W. (1990). The motivational basis of organizational citizenship behavior. In B. Staw, & L. Cummings (Eds.), Research in organizational behavior (Vol. 12, pp. 43-72). Greenwich, CT: JAI Press

Organ, D. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10*(2), 85-97. https://doi.org/10.1207/s15327043hup1002_2

Oswald, F., & Hough, L. (2008). Personality testing and industrial–organizational psychology: A productive exchange and some future directions. *Industrial and Organizational Psychology, 1*(3), 323-332. https://doi.org/10.1111/j.1754-9434.2008.00057.x

Patrick, C. J. (2010). Triarchic Psychopathy Measure (TriPM). PhenX Toolkit online assessment catalog, 813-814.

Paulhus, D. L. (2002). Social desirable responding: The evolution of a construct. In. H. I. Braun, D. N. Jackson, & D. E. Wiley (Eds). *The role of constructs in psychological and educational measurement*. (pp. 49-69). Mahwah, NJ: Erlbaum.

Paulhus, D. L., Hemphill, J. F., & Hare, R. D. (2012). Self-report psychopathy scale (SRP-III). Toronto: Multi-Health Systems.

Paulhus, D. L., & Williams, K. M. (n.d.). The Dark Triad of personality: Narcissism, machiavellianism, and psychopathy. *Journal of Research in Personality*, *36*, 556–563. https://doi.org/10.1016/S0092-6566(02)00505-6

Perugini, M., Richetin, J., & Zogmaister, C. (2010). Prediction of behavior. In B. Gawronski, & K. Payne (Eds.), *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications* (pp. 255-277). New York: Guilford

Pletzer, Oostrom, J. K., & de Vries, R. E. (2021). HEXACO Personality and Organizational Citizenship Behavior: A Domain- and Facet-Level Meta-Analysis. *Human Performance*, *34*(2), 126–147. https://doi.org/10.1080/08959285.2021.1891072

Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. (2003). Common Method Biases in Behavioral Research. *Journal of Applied Psychology, 88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual- and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, *94*(1), 122–141. https://dx.doi.org/10.1037/a0013079

PricewaterhouseCoopers. (2012, October 21). Stealing retailer's thunder: Pwc estimates Canadian retailers are losing over 10 million a day to shrinkage. Retrieved from https://www.prnewswire.com/news-releases/stealing-retailers-thunder-pwc-estimates-canadian-retailers-are-losing-over-10-million-a-day-to-shrinkage-511073751.html

Richer, I., Lee, J., & Born, J. (2016). Patterns of alcohol use among Canadian military personnel and their associations with health and well-being. *Health Psychology, 35*(7), 685-694. https://doi.org/10.1037/hea0000328

Ridgeway, C., & Johnson, C. (1990). What is the relationship between socioemotional behavior and status in task groups? *American Journal of Sociology*, *95*, 1189-1212. https://doi.org/10.1086/229426

Robinson, P. R., & Bennett, R. J. (1995). A typology of deviant-workplace behaviours: A

    multidimensional scaling study. *Academy of Management Journal, 38*, 441-464.

    https://doi.org/10.2307/256693

Roccas, S., Sagiv, L., Schwartz, S., & Knafo, A. (2002). The Big Five personality factors and

    personal values. *Personality & Social Psychology Bulletin, 28*(6), 789-801.

    https://doi.org/10.1177/0146167202289008

Sackett, P. R. & Wanek, J. E. (1996). New directions in the use of measures of honesty, integrity,

    conscientiousness, dependability, trustworthiness and reliability for personal selection.

    Personnel Psychology, 37, 221-245. https://doi.org/10.1111/j.1744-6570.1996.tb02450.x

Sandler, J. (1987). *Projection, Identification, Projective Identification* (1st ed.). London:

    Routledge.

Schilback, M., Baethge, A., & Rigotto, T. (2020). Why employee psychopathy leads to

    counterproductive workplace behaviours: An analysis of the underlying mechanisms.

    European Journal of Work and Organizational Psychology, *29*(5), 693–706.

    https://doi.org/10.1080/1359432X.2020.1739650

Schoen, J. L., Bowler, J. L., & Schilpzand, M. C. (2018). Conditional reasoning test for creative

    personality: Rationale, theoretical development, and validation. Journal of Management,

    44, 1651-1677. https://doi.org/10.1177/0149206315618012

Schütte, N., Blickle, G., Frieder, R. E., Wihler, A., Schnitzler, F., Heupel, J., & Zettler, I. (2018).

    The role of interpersonal influence in counterbalancing psychopathic personality trait

    facets at work. *Journal of Management*, *44*(4), 1338–1368.

    https://doi.org/10.1177/0149206315607967

Shapiro, I., & Adams, R.M. (Eds.). (1998). *Integrity and conscience*. New York: NYU Press.

Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, *68*(4), 653–663. https://dx.doi.org/10.4135/9781452231082

Smithikrai, C. (2007). Personality Traits and Job Success: An investigation in a Thai sample. *International Journal of Selection and Assessment, 15*(1), 134-138. https://doi.org/10.111/j.1468-2389.2007.00372.x

Spain, S. M., Harms, P. D., & Lebreton, J. M. (2014). The dark side of personality at work. *Journal of Organizational Behavior*, *35*, S41–S60. https://doi.org/10.1002/job.1894

Spector, P., Bauer, J., & Fox, S. (2010). Measurement artifacts in the assessment of counterproductive work behavior and organizational citizenship behavior. *Journal of Applied Psychology, 95*(4), 781-790. https://doi.org/10.1037/a0019477

Spector, P. E., Fox, S., Penney, L. M., Bruursema, A. G., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior*, *68*, 446–460. https://doi.org/10.1016/j.jvb.2005.10.005

Stewart, N. (2013). Missing in action: absenteeism trends in Canadian organizations. Ottawa: The conference board of Canada. Retrieved from https://www.conferenceboard.ca/e-library/abstract.aspx?did=5780

Szabó, Z. P., Czibor, A., Restás, P., & Bereczkei, T. (2018). "The darkest of all": The relationship between the Dark Triad traits and organizational citizenship behavior. *Personality and Individual Differences*, *134*, 352–356. https://doi.org/10.1016/j.paid.2018.04.026

Szabó, Z. P., Simon, E., Czibor, A., Restás, P., & Bereczkei, T. (2021). The importance of dark

personality traits in predicting workplace outcomes. *Personality and Individual Differences*, *183*, 111112–. https://doi.org/10.1016/j.paid.2021.111112

Tepper, B. J., Duffy M. K., Henle, C. A., & Lambert, L. S. (2006). Procedural Injustice, Victim Precipitation, and Abusive Supervision. *Personnel Psychology*, *59*(1), 101–123. https://doi.org/10.1111/j.1744-6570.2006.00725.x

Tonidandel, S., & LeBreton, J. (2015). RWA Web: A Free, Comprehensive, Web-Based, and User-Friendly Tool for Relative Weight Analyses. *Journal of Business and Psychology, 30*(2), 207-216. https://doi.org/10.1007/s10869-014-9351-z

Vidotto, G., Anselmi, P., Filipponi, L., Tommasi, M., & Saggino, A. (2018). Using overt and covert items in self-report personality tests: Susceptibility to faking and identifiability of possible fakers. *Frontiers in Psychology, 9*, 1100. https://doi.org/10.3389/fpsyg.2018.01100

Wanek, J. E., Sackett, P. R., & Ones, D. S. (2003). Towards an understanding of integrity test similarities and differences: An item-level analysis of seven tests. *Personnel Psychology, 56*, 873-894. https://doi.org/10.1111/j.1744-6570.2003.tb00243.x

Webster, B. D., & Smith, M. B. (2019). The Dark Triad and organizational citizenship behaviors: The moderating role of high involvement management climate. *Journal of Business and Psychology*, *34*, 621–635. https://doi.org/10.1007/s10869-018-9562-9

Westerlaken, K. M., & Woods, P. R. (2013). The relationship between psychopathy and the Full Range Leadership model. *Personality and Individual Differences*, *54*(1), 41-46. https://doi.org/10.1016/j.paid.2012.08.026

Wiita, N. E., Meyer, R. D., Kelly, E., & Collins, B. J. (2020). Not aggressive or just faking it? Examining faking and faking detection on the Conditional Reasoning Test of Aggression.

Organizational Research Methods, *23*(1), 96–123.

https://doi.org/10.1177/1094428117703685

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as

predictors of organizational citizenship and in-role behaviors. *Journal of Management*,

17(3), 601–617. http://dx.doi.org/10.1177/014920639101700305

Williams, L. J., & Brown, B. K. (1994). Method variance in organizational behavior and human

resources research: Effects on correlations, path coefficients, and hypothesis

testing. *Organizational Behavior and Human Decision Processes*. *57*(2), 185-209.

https://doi.org/10.1006/obhd.1994.1011

Appendix A

Research Invitations – Sent via Email

Participants Time 1:

Ref: CANAIRGEN 04/22 – PARTICIPANT REQUEST (RCAF CPL/MCPL) – RESEARCH STUDY AIMED TO IMPROVE CAF SELECTION PROCESS

Name/Nom:
Research Code/Code de research:

As we strive to improve the selection process for various occupations, members at the Corporal and Master Corporal ranks are invited to participate in a research project to examine the usefulness of new tools that are being considered for use in future selection.

Supervisors of participating members may also be invited to participate, and will receive a separate invitation and survey weblink at a later time.

This project is supported by the RCAF, and is sponsored by Director General Military Personnel Research & Analysis (DGMPRA) in collaboration with Saint Mary's University. It has also been approved by the DND/CAF Social Science Research Review Board (SSRRB) in accordance with DAOD 5062-0 and 5062-1. The SSRRB approval number is: 1992/21F.

If you are at the Corporal or Master Corporal rank, and wish to learn more about or to participate in this research, **please click on the link below.**

https://smuniversity.qualtrics.com/jfe/form/SV_6GaZyXG5ytUADMq

If you experience problems accessing the link, contact keith.joy@forces.gc.ca. This link may be accessed using any computer with internet access.

_____

Dans le cadre de nos efforts pour améliorer les processus de sélection des professions des FAC, les membres aux grades de caporal et de caporal-chef sont invités à participer à un projet de recherche visant à examiner l'utilité de nouveaux outils que l'on envisage d'utiliser dans les processus de sélection future.

Les superviseurs des membres participants peuvent également être invités à participer. Ils recevront une invitation distincte et un lien Web vers le sondage à une date ultérieure.

Ce projet est soutenu par l'ARC et est parrainé par le Directeur général – Recherche et analyse (Personnel militaire) (DGRAPM) en collaboration avec l'Université Saint Mary's. Il a été approuvée par le Comité d'examen de la recherche en sciences sociales (CERSS) du MDN et des FAC, conformément aux DOAD 5062-0 et 5062-1. Le numéro d'approbation du CERSS est : 1992/21F.

Si vous avez le grade de caporal ou de caporal-chef, et que vous souhaitez en savoir plus sur cette recherche ou y participer, **cliquez le lien ci-dessous.**

https://smuniversity.qualtrics.com/jfe/form/SV_bOqU8JZKiywGQXc

Si le lien ne fonctionne pas, contactez keith.joy@forces.gc.ca. Ce lien peut être consulté à partir de n'importe quel ordinateur ayant accès à Internet.

Participants Time 2:

Ref: CANAIRGEN 04/22 - PARTICIPANT REQUEST (RCAF CPL/MCPL) - RESEARCH STUDY AIMED TO IMPROVE CAF SELECTION PROCESS

Name/Nom:
Research Code/Code de recherche:

Thank you for completing the first portion of this research. To fulfill your participation in this study, please respond to the questions provided via the link below. Once again, you'll be asked to enter your unique research code, provided above.

You contribution to this research is greatly appreciated.

https://smuniversity.qualtrics.com/jfe/form/SV_5cAEgc4IjkS2fKC

If you experience problems accessing the link, contact keith.joy@forces.gc.ca.

Merci pour votre participation à la première partie de cette recherche. Afin de compléter votre participation dans cette étude, merci de répondre aux questions supplémentaires en utilisant le lien ci-dessous. Comme précédemment, il vous sera demandé d'entrer votre code de recherche unique (inclus ci-dessus).

Votre contribution à cette recherche est grandement appréciée.

https://smuniversity.qualtrics.com/jfe/form/SV_77Baki1MCEIC8AK

Si le lien ne fonctionne pas, contactez keith.joy@forces.gc.ca.

Supervisors:

Ref: CANAIRGEN 04/22 - PARTICIPANT REQUEST (RCAF CPL/MCPL) - RESEARCH STUDY AIMED TO IMPROVE CAF SELECTION PROCESS

Name/Nom:
Research Code/Code de recherche:

Your subordinate «Rank_En» «First_Name» «Last_Name» has consented to us contacting you to complete a brief evaluation of their leadership potential and specific performance behaviours, as part of a research project directed at examining the usefulness of new tools that are being considered for use in future selection.

This project is supported by the RCAF, and is sponsored by Director General Military Personnel Research & Analysis (DGMPRA) in collaboration with Saint Mary's University. It has also been approved by the DND/CAF Social Science Research Review Board (SSRRB) in accordance with DAOD 5062-0 and 5062-1. The SSRRB approval number is: 1992/21F.

To learn more about this project and/or to participate as a supervisor, **please click on the link below.**

https://smuniversity.qualtrics.com/jfe/form/SV_0dOowDINCQWTTjU

If you experience problems accessing the link, contact keith.joy@forces.gc.ca. This link may be accessed using any computer with internet access.

_____

Votre subordonné «Rank_En» «First_Name» «Last_Name» a consenti à ce que nous entrions en contact avec vous pour effectuer une brève évaluation de son potentiel de leadership et de ses comportements de performance spécifiques, dans le cadre d'un projet de recherche visant à examiner l'utilité de nouveaux outils que l'on envisage d'utiliser dans les processus de sélection future.

Ce projet est soutenu par l'ARC et est parrainé par le Directeur général – Recherche et analyse (Personnel militaire) (DGRAPM) en collaboration avec l'Université Saint Mary's. Il a été approuvé par le Comité d'examen de la recherche en sciences sociales (CERSS) du MDN et des FAC, conformément aux DOAD 5062-0 et 5062-1. Le numéro d'approbation du CERSS est : 1992/21F.

Pour en savoir plus sur ce projet et/ou pour participer en tant que superviseur, **cliquez le lien ci-dessous.**

https://smuniversity.qualtrics.com/jfe/form/SV_8qRHuE6mQHydH4q

Si le lien ne fonctionne pas, contactez keith.joy@forces.gc.ca. Ce lien peut être consulté à partir de n'importe quel ordinateur ayant accès à Internet.

Appendix B

Informed Consent Form - Participants

Purpose:

The purpose of this research is to examine the influence of reasoning, work styles, personality, and integrity on positive and negative workplace behaviours. The outcomes of this research will be used to make improvements to the selection process for military occupations.

SSRRB Approval Number:
This research project has been approved by the DND/CAF Social Science Research Review Board (SSRRB) in accordance with DAOD 5062-0 and 5062-1. The SSRRB approval # is 1992/21F.

At this time, you will be required to complete several short assessments to determine your judgement in certain situations, and your preferences for certain activities. These assessments should take about 30 minutes to complete.

You will also be invited to participate in a follow-up survey in about 2-3 weeks which will require only 10 minutes of your time, but you may choose not to participate. With your consent, your supervisor will also be invited to complete a short evaluation of your leadership potential, and other workplace behaviours.

The scores that you obtain on these assessments cannot be shared with you, and will not be used for any administrative purpose in the CAF. They will, however, be examined with other assessments that you completed as part of the general-entry CAF selection process for the purposes of making improvements to the process. To maintain your anonymity, a randomly generated research code will be used to link these assessments.

Your participation is completely voluntary, and you may withdraw from this session at any time with no negative consequences.

Risks:
The risks associated with participating in this study are assessed to be minimal. Some people may experience discomfort similar to that experienced during any testing or examination session.

Information you Provide:
The information collected in this session will be kept strictly confidential. No personally identifying information will be collected with the test.

Future Uses of Data/Secondary Analysis
The anonymized data will be stored on a secure server controlled by National Defence and will be retained until a time when it is no longer required. This data may be accessible by the study investigators and used in future research (e.g., for research involving other similar tools).

ATIP Considerations:

The *Access to Information Act* and the *Privacy Act* entitles Canadian citizens, permanent residents of Canada, and individuals or corporations currently present in Canada to obtain copies of research reports and research information held in federal government files. Prior to releasing any information, the Director Access to Information and Privacy screens the information to ensure that the identities of individuals are not disclosed.

Questions/Concerns:
If you have any questions or concerns regarding this study, please email CMP.DRPG_Surveys-Sondages_DPPR@forces.gc.ca

Proceeding with this session indicates that you understand to your satisfaction the information provided to you about your participation in this research. Given the proprietary nature of some of the assessments you are about to complete, you also agree to respect the confidentiality of this material, and to not reproduce or discuss its contents with others.

In addition, you (check all that apply):

____agree to participate in a follow-up survey in 2 to 3 weeks. You will be contacted only if you check this box.

____agree to have your supervisor complete an evaluation on your performance. The name of your supervisor will be required if you check this box (Enter Supervisor Rank, First and Last Name here: _____)

To proceed with this session, please click on the link below and enter this research code *<insert code>* when prompted.

< insert weblink>

Appendix C

Informed Consent Form – Supervisors

Purpose:
The purpose of this research is to examine the influence of reasoning, work styles, and preferences on various workplace behaviours. The outcomes of this research will be used to make improvements to the selection process for this occupation.

SSRRB Approval Number:
This research project has been approved by the DGMPRA Social Science Research Review Board in accordance with DAOD 5062-0 and 5062-1. The SSRRB approval # is 1992/21F.

Participation:

In this session, you will be required to evaluate your subordinate's leadership potential and other workplace behaviours by responding to a list of items or statements using a given rating scale. The entire session should take between 15 and 30 minutes to complete.

The information you provide in this session will not be shared with your subordinate, and will not be used for any administrative purpose in the CAF. It will, however, be examined with other assessments of judgement and personality that your subordinate has already completed. To maintain your and your subordinate's anonymity, randomly generated research codes will be used to link the data. Your participation is completely voluntary, and you may withdraw from this session at any time with no negative consequences.

Risks:
The risks associated with participating in this study are assessed to be minimal.

Information you Provide:
The information collected in this session will be kept strictly confidential. No personally identifying information will be collected with the test.

Future Uses of Data/Secondary Analysis
The anonymized data will be stored on a secure server controlled by National Defence and will be retained until a time when it is no longer required. This data may be accessible by the study investigators and used in future research (e.g., for research involving other similar tools).

ATIP Considerations:
The *Access to Information Act* and the *Privacy Act* entitles Canadian citizens, permanent residents of Canada, and individuals or corporations currently present in Canada to obtain copies of research reports and research information held in federal government files. Prior to releasing any information, the Director Access to Information and Privacy screens the information to ensure that the identities of individuals are not disclosed.

Questions/Concerns:
If you have any questions or concerns regarding this study, please contact Wendy Darr (wendy.darr@forces.gc.ca) or LCdr Keith Joy (keith.joy@forces.gc.ca)

Consent
Proceeding with this session indicates that you understand to your satisfaction the information provided to you about your participation in this research and that you agree to participate.

To proceed with this session, please click on the link below and enter this research code *<insert code>* to evaluate the subordinate named in the research invitation.

< insert weblink>

Appendix D

Demographic Questions – Participants

Gender?

(Gender refers to current gender, which may be different from sex assigned at birth and may be different from what is indicated on legal documents.)

☐ Man

☐ Woman

☐ Another Gender (optional to specify)

☐ Prefer not to say

Which of the following groups do you self-identify as (check all that apply)?

☐ Caucasian

☐ Indigenous

☐ Person with Disability

☐ Visible Minority

☐ Other (please specify)_____

☐ Prefer not to say

What is your current rank?

☐ Junior NCM (Corporal/Master Corporal)

☐ Senior NCM (Sergeant/Warrant Officer or higher)

☐ Junior Officer (Second Lieutenant/Captain)

☐ Senior Officer (Major/Lieutenant Colonel)

What is your current component?

☐ Not applicable

☐ Regular Force (Reg F)

☐ Reserve Force (Res F)

What is your current occupation?

(drop down list)

00337	AC OP / OP C AÉRO
00138	ACS TECH / TECH SA
00019	AES OP / OP DEA
00363	AM SUPT / SUR MA
00109	ATIS TECH / TECH SITA
00135	AVN TECH / TECH AÉRO
00136	AVS TECH / TECH AVIO
00261	AWS TECH / TECH SA (A)
00307	CE SUPT / SURV GC
00306	CONST TECH / TECH CONST
00370	DS TECH / TECH DA
00302	ED TECH / TECH DE
00303	EGS TECH / TECH GE
00149	FIRE FTR / POMPIER
00021	FLT ENGR / MÉC B
00343	NDT TECH / TECH END
00304	PH TECH / TECH PC
00301	RM TECH / TECH RÉFR
00101	SAR TECH / TRS
00305	WFE TECH / TECH EPPE
00386	AOS TECH

How long have you served in the Canadian Armed Forces?

_____ (in months)

Appendix E

Demographic Questions – Supervisors

Gender?

(Gender refers to current gender, which may be different from sex assigned at birth and may be different from what is indicated on legal documents.)

☐ Man

☐ Woman

☐ Another Gender (optional to specify)

☐ Prefer not to say

Which of the following groups do you self-identify as (check all that apply)?

☐ Caucasian

☐ Indigenous

☐ Person with Disability

☐ Visible Minority

☐ Other (please specify)_____

☐ Prefer not to say

What is your current rank?

☐ Junior NCM (Corporal/Sailor 1st Class; Master Corporal/Master Sailor)

☐ Senior NCM (Sergeant/Petty Officer 2nd Class; Warrant Officer/Petty Officer 1st Class or higher)

☐ Junior Officer (Second Lieutenant/Acting Sub-Lieutenant; Captain/Lieutenant (Navy))

☐ Senior Officer (Major/Lieutenant Commander (Navy); Lieutenant Colonel/Commander (Navy)

What is your current component?

☐ Not applicable

☐ Regular Force (Reg F)

☐ Reserve Force (Res F)

How long have you served in the Canadian Armed Forces?

     _____ (in months)

How long have you been the direct supervisor of the subordinate on whom you are reporting?

     _____ (in months)

Appendix F

Conditional Reasoning Test – Workplace Psychopathy (CRT-WP)

Content removed to protect the integrity of the CRT-WP. Please contact Cook and Roulin (2021) for further details about the assessment.

Appendix G

Trait Self Descriptive – Integrity Scale (TSD-Integrity Scale)

Rate the extent to which each statement or adjective is characteristic of you as you see yourself:

(1 = extremely uncharacteristic; 2= quite uncharacteristic; 3=slightly uncharacteristic, 4= neither characteristic nor uncharacteristic, 5=slightly characteristic, 6= quite characteristic, 7 = extremely characteristic).

1) I like to keep my belongings neat and organized. (C)

2) Organized. (C)

3) Neat. (C)

4) I always have a place for everything and everything in its place. (C)

5) I am always generous when it comes to helping others. (A)

6) I like to help others when they are down on their luck. (A)

7) Helpful. (A)

8) I always treat others with kindness. (A)

9) When I am under stress, I often feel that I am about to break down. (ES) (R)

10) Sometimes I feel discouraged and want to give up. (ES) (R)

Note. (R) = reverse scored items; (C) = Conscientiousness; (A) = Agreeableness; (ES) = Emotional Stability.

Appendix H

Cautiousness Scale

Rate how accurately the following statements describe you as you see yourself:

(1 = very inaccurate; 2= moderately inaccurate; 3= neither inaccurate nor accurate; 4= moderately accurate; 5 = very accurate)

1) Avoid mistakes.

2) Choose my words with care.

3) Stick to my chosen path.

4) Jump into things without thinking. (R)

5) Make rash decisions. (R)

6) Like to act on a whim. (R)

7) Rush into things. (R)

8) Do crazy things. (R)

9) Act without thinking. (R)

10) Often make last-minute plans. (R)

Note. (R) = reverse score item

Appendix I

Irresponsibility Scale

Rate how accurately the following statements describe you as you see yourself

(0 = very false or often false, 1 = sometimes or somewhat false, 2 = sometimes true or somewhat true, 3 = very true or often true).

1) Others see me as irresponsible.

2) I'm often pretty careless with my own and others' things.

3) I make promises that I don't intend to keep.

4) I often forget to pay my bills.

5) I've skipped town to avoid responsibilities.

6) I just skip appointments or meetings if I'm not in the mood.

7) I follow through on commitments. (R)

Note. (R) = reverse score items

Appendix J

Counterproductive Work Behaviour – Checklist (CWB-C)

Rate how frequently you engaged in the following behaviours over the past 6 months:

(1 = Never; 2 = Once of Twice; 3 = Once or twice/month; 4 = Once or twice/week; 5 = Every day)

1) Purposely wasted your employer's materials/supplies (Sabotage)

2) Purposely damaged a piece of equipment or property (Sabotage)

3) Purposely dirtied or littered your place of work (Sabotage)

4) Came to work late without permission (Withdrawal)

5) Stayed home from work and said you were sick when you were not (Withdrawal)

6) Taken a longer break than you were allowed to take (Withdrawal)

7) Left work earlier than you were allowed to (Withdrawal)

8) Purposely did your work incorrectly (Production Deviance)

9) Purposely worked slowly when things needed to get done (Production Deviance)

10) Purposely failed to follow instructions (Production Deviance)

11) Stolen something belonging to your employer (Theft)

12) Took supplies or tools home without permission (Theft)

13) Stole something belonging to someone at work (Theft)

14) Started or continued a damaging or harmful rumor at work (Abuse)

15) Been nasty or rude to a fellow CAF member or client. (Abuse)

16) Insulted someone about their job performance (Abuse)

17) Made fun of someone's personal life (Abuse)

18) Ignored someone at work (Abuse)

19) Blamed someone at work for an error you made (Abuse)

20) Started an argument with someone at work (Abuse)

21) Verbally abused someone at work (Abuse)

22) Made an obscene gesture (i.e., the finger) to someone at work (Abuse)

23) Threatened someone at work with violence (Abuse)

24) Threatened someone at work, but not physically (Abuse)

25) Said something obscene to someone at work to make them feel bad (Abuse)

26) Did something to make someone at work look bad (Abuse)

27) Played a mean prank to embarrass someone at work (Abuse)

28) Looked at someone at work's private mail/property without permission (Abuse)

29) Hit or pushed someone at work (Abuse)

30) Insulted or made fun of someone at work (Abuse)

Appendix K

Short Version Counterproductive Work Behaviour – Checklist (CWB-C SV)

Rate how frequently <u>your subordinate</u> has engaged in the following behaviours over the past 6 months:

(1 = Never; 2 = Once of Twice; 3 = Once or twice/month; 4 = Once or twice/week; 5 = Every day)

1) Purposely wasted their employer's materials/supplies.

2) Complained about insignificant things at work.

3) Told people outside the job what a lousy place they work for.

4) Came to work late without permission.

5) Stayed home from work and said they were sick when they weren't.

6) Insulted someone about their job performance.

7) Made fun of someone's personal life.

8) Ignored someone at work.

9) Started an argument with someone at work.

10) Insulted or mode fun of someone at work.

Appendix L

Global Transformational Leadership Scale (GTL)

Rate your subordinate in terms of how frequently they engaged in the following behaviours over the past 6 months

(1 = Rarely or never to 5 = Very frequency, if not always)

1) Communicates a clear and positive vision of the future.

2) Treats fellow CAF members, colleagues, and/or subordinates, as individuals, supports and encourages their development.

3) Gives encouragement and recognition to fellow CAF members, colleagues and/or subordinates.

4) Fosters trust, involvement and cooperation among team members.

5) Encourages thinking about problems in new ways and questions assumptions.

6) Is clear about their values and practices what they preach.

7) Instills pride and respect in others and inspires others by being highly competent.

Appendix M

Organizational Citizenship Behavior – Checklist (OCB-C)

Rate your subordinate in terms of how frequently they engaged in the behaviour described over the past 6 months:

(1 = Never, 2 = Once or twice, 3 = Once or twice per month, 4 = Once or twice per week, 5 = Everyday; Not Applicable).

1) Picked up meals for others at work.

2) Took time to advise, coach, or mentor a co-worker.

3) Helped a co-worker learn new skills or shared job knowledge.

4) Helped new employees get oriented to the job.

5) Lent a compassionate ear when someone had a work problem.

6) Lent a compassionate ear when someone had a personal problem.

7) Changed vacation schedule, workdays, or shifts to accommodate a co-worker's needs.

8) Offered suggestions to improve how work is done.

9) Offered suggestions for improving the work environment.

10) Finished something for a co-worker who had to leave early.

11) Helped a less capable co-worker lift a heavy box or other object.

12) Helped a co-worker who had too much to do.

13) Volunteered for extra work assignments.

14) Took phone messages for absent or busy co-worker.

15) Said good things about your employer in front of others.

16) Gave up meal and other breaks to complete work.

17) Volunteered to help a co-worker deal with a difficult customer or co-worker.

18) Went out of the way to give a co-worker encouragement or express appreciation.

19) Decorated, straightened up, or otherwise beautified common work space.

20) Defended a co-worker who was being 'put-down' or spoken ill of by other co-workers or supervisor.

Appendix N

Data Collection Overview - Measures and Measurement Times

	Measure	Criterion	Time	Item Total (est. time)
Participant (Occupation Incumbent)	CRT – WP (Cook, 2019)	Workplace Psychopathy	Time 1	22 (18-22 min)
	TSD Integrity Scale (Catano et al., 2018)	Integrity	Time 1	10 (5 min)
	Integrity – Cautiousness, Irresponsibility (Darr (DND), 2019)	Integrity	Time 1	17 (< 3-4mins)
	CWB-C (Abuse - Bullying, Production Deviance, Sabotage, Theft, Withdrawal) (Spector et al., 2006)	Counterproductive Work Behaviours	Time 2	32 (< 7-8 mins)
				Total: 81 (37-39 mins)
Supervisor	Global Transformational Leadership Scale (Carless et al., 2000)	Leadership Behaviour (Transformational)	Time 1	7 (< 3 mins)
	Organizational Citizenship Behaviours (OCB-C) (Spector et al., 2006)	Organizational Citizenship Behaviours	Time 1	20 (< 5 mins)
	Short Version CWB-C (observer report; Abuse - Bullying, Production Deviance, Sabotage, Theft, Withdrawal) (Spector et al., 2010)	Counterproductive Work Behaviours	Time 1	10 (< 3 mins)
				Total: 37 (11 mins)

Appendix O

Multilevel Modeling Analysis of Supervisor Report Criteria

Fixed Effects Estimates (Top), Variance-Covariance Estimates (Middle) and Fit Statistics (Bottom) for Models of the Predictors of Subclinical Psychopathy (CRT-WP)

Relationship	Leadership vs. CRT-WP				CWB-S vs. CRT-WP				OCB vs. CRT-WP		
Parameter	Model 1	Model 2	Model 3	Parameter	Model 1	Model 2	Model 3	Parameter	Model 1	Model 2	Model 3
	Fixed Effects				Fixed Effects				Fixed Effects		
Intercept	-.65*** (.02)	-.65*** (.05)	-.65*** (.02)	Intercept	-.65*** (.02)	-.65*** (.02)	-65*** (.02)	Intercept	-.65*** (.02)	-.65*** (.02)	-65*** (.02)
Leadership		-.05* (.02)	-.03 (.03)	CWB-S			.09 (.06)	.03 (.07)	OCB		.01 (.02)	.01 (.02)
	Random Effects				Random Effects				Random Effects		
Intercept	Negligible	Negligible	.002 (.01)	Intercept	Negligible	Negligible	Negligible	Intercept	Negligible	Negligible	Negligible
Leadership (spvr)			.02* (.01)	CWB-S (spvr)			.05 (.04)	OCB (spvr)			Negligible
-2 log likelihood	-46.43	-50.81	-63.55	-2 log likelihood	-46.43	-48.67	-57.21	-2 log likelihood	-46.43	-46.57	-46.57
Improvement from null model	-.41	3.97	16.71	Improvement from null model	-.41	1.83	10.37	Improvement from null model	-.41	-.27	-.27
Improvement from previous model	-.41	4.38	12.74	Improvement from previous model	-.41	2.24	8.54	Improvement from previous model	-.41	.14	0
Parameters	3	4	5	Parameters	3	4	5	Parameters	3	4	5

Note. Standard errors are in parentheses. To facilitate multilevel modeling in order to evaluate supervisor level effects (spvr) of observer-report criterion (Level 2), CRT-WP scores were entered into each model as the dependent variable and the supervisor criterion were entered as the independent variables, as they were partially nested. The null model for each analysis was uniform across all assessed relationships: -2LL = -46.84, Parameters = 2, Fixed Intercept = -.65 (.02) (Model 0). Models were built hierarchically, Model 1 – unconditional model, Model 2 – fixed effect added, Model 3 – random effect added. Multilevel modeling was explored as there was a subgroup of the supervisors (n = 27) who assessed more than one subordinate. Interclass coefficients were calculated for supervisor report criterion: Leadership (ICC = negligible – redundant covariance), CWB (ICC = .53), and OCB (ICC = .31). It was assessed there was insufficient variance at the supervisor level, based on the unstable nature of the results. ICC values were either excessively high or negligible. It was assessed the system likely had difficulty partitioning the group effect from the individual effect, as the vast majority of the data were interdependent. Therefore, bivariate correlational analyses were used to test evaluated hypotheses. It should be noted that MLM results supported the resultant relationships via bivariate correlations between the CRT-WP and supervisor report criterion.
* $p < .05$. ** $p < .01$. *** $p < .001$