



Abstract

To support the Military Compatibility Research Group (MCRG) and participating DoD entities (e.g., the military departments and supporting agencies), PERSEREC is examining whether improvements can be made to DoD's current military accession process. Potential improvements to this process are of paramount interest to DoD as the military continues to see a rise in violence- or misconduct-related behaviors such as sexual assault.

This Research Note documents a *Research Summary* covering work conducted by PERSEREC on behalf of the MCRG during CY2020-2021. In this research, PERSEREC underscores compatibility constructs, measures, and practices that are currently employed (or could be employed) to improve the accession process and to better identify high-risk personnel who require additional scrutiny.

Compatibility Assessment and Prediction of Misconduct: A Review of the Academic Research Literature

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Introduction

The Personnel Security and Research Center (PERSEREC) conducted a comprehensive review of applicant compatibility assessments on behalf of DoD's Office of the Under Secretary for Personnel and Readiness (OUSD P&R) Accession Policy Directorate, Sexual Assault Prevention and Response Office (SAPRO), and the Office of Force Resiliency (OFR). The goal of this review was to identify best practices for assessing and selecting DoD military applicants. Compatibility assessments are used to determine whether an applicant is likely to be a good "fit" for an organization and to estimate an applicant's risk of engaging in future misconduct, violence, or other problematic behavior. These assessments may evaluate aspects of an applicant's character, personality, values, opinions, decision-making, or behavioral and legal history.

Background

On May 1, 2019, in response to the FY18 annual report on military sexual assault, the SECDEF released an action memo calling for improved processes for identifying recruits with strong moral and ethical character. To address this required action, the SECDEF commissioned the Military Compatibility Research Group (MCRG) consisting of the following organizations: DoD's Accession Policy (AP) Office, Military Departments, Military Services, DoD Sexual Assault Prevention and Response Office (SAPRO), Office for Diversity, Equity, and Inclusion (ODEI), and the Office of People Analytics (OPA).

Since commissioning the MCRG, a plan of action and milestones (PO&AM) was developed to support research (publication date: July 28, 2020). The current Research Summary specifically informs the development of measurable constructs related to military compatibility and the identification of available metrics.

Method and Results

We present our methodological research approach and results in the attached *Research Summary* (see Appendix A). This Research Summary was briefed to the MCRG at various time points over the course of CY2020-2021. All correspondence concerning this research should be addressed to the government POC at: rene.m.dickerhoof.civ@mail.mil.

Appendices

Appendix A: Compatibility Assessment and Prediction of Misconduct: A Review of the Academic Research Literature

Appendix A

Military Compatibility Research Group



Compatibility Assessment and Prediction of Misconduct: A Review of the Academic Research Literature

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CONTENTS

INTRODUCTION	3
METHOD	4
RESULTS	5
CONCLUSION	20
REFERENCES	21

INTRODUCTION

DoD's Under Secretary for Personnel and Readiness (OUSD P&R) Accession Policy Directorate, Sexual Assault Prevention and Response Office (SAPRO), and Office of Force Resiliency (OFR) engaged the Defense Personnel Security and Research Center (PERSEREC) to conduct a comprehensive review of applicant compatibility assessments. The goal of this review is to identify best practices for assessing and selecting DoD military applicants. Compatibility assessments are used to determine whether an applicant is likely to be a good "fit" for an organization and to estimate an applicant's risk of engaging in future misconduct, violence, or other problematic behavior. These assessments may evaluate aspects of an applicant's character, personality, values, opinions, decision-making, or behavioral and legal history.

This is the first of four brief research summaries that describe compatibility assessment practices used to evaluate job applicants and inform selection and hiring decisions. Subsequent research summaries will describe compatibility assessment practices used to evaluate applicants to the DoD Armed Forces Services and other government organizations, specifically. The final research summary will present a comparison of findings across sectors and will address important topics such as disproportionate impact of assessment on individuals by race, ethnicity, and gender. Because the prediction of misconduct and other organizationally problematic behavior is a central component of compatibility assessment, this environmental scan begins with a review of the academic research literature on conceptual predictors of misconduct, counterproductive workplace behavior (CWB), violence, sexual

assault, crime, antisocial behavior, and attrition. The most widely used instruments² shown to predict these outcomes are described, with particular attention on their established psychometric properties.

METHOD

Using an iterative approach, we identified studies for inclusion in this academic research literature review utilizing the American Psychological Association's (APA's) PsychNET/PsychINFO database and Google Scholar.

- First, we created a list of keywords that described our outcomes of interest. These keywords included misconduct, counterproductive workplace behavior, violence, sexual assault, crime, antisocial behavior, and attrition. These keywords are presented in Table 1.
- Next, we conducted a series of searches using each of these keywords in combination with the term “predict” to identify studies that examine prediction of these constructs. All abstracts returned from these searches were manually reviewed for potential inclusion. We prioritized peer-reviewed empirical studies, particularly those of a prospective nature³ and those that used military samples.
- Once an article was selected for inclusion, we reviewed the article's reference list and considered those articles for inclusion by reading their abstracts. Similarly, we reviewed a list of all publications that cited the original article within their reference list and considered those studies for inclusion by reviewing their abstracts.
- Based on this approach, we identified a large number of research studies concerned with the prediction of misconduct and other organizationally problematic outcomes. Using these source data, we then created a list of 17 identified conceptual predictors (e.g., dishonesty, impulsivity, and psychopathy).
- Next, we conducted a series of searches by combining each conceptual predictor (e.g., dishonesty) with each of the original outcomes of interest (e.g., misconduct). Again, we prioritized empirical articles of a prospective nature and those that used military samples, and we reviewed for inclusion the reference list as well as the list of papers referencing that study.
- At this stage, we were able to create a list of instruments used to assess each of the 17 identified predictors. For instance, a search using the keywords “impulsivity” (a conceptual predictor) and “violence” (an outcome of interest) led to the identification of articles that describe the Barratt Impulsiveness Scale (BIS-11; Patton, Stanford, & Barratt, 1995).
- As a final step, each identified instrument (e.g., BIS-11) was used as a new keyword and combined with the term “psychometrics” to identify all studies that examined the psychometrics of that instrument. Comprehensive psychometric data were collected for all instruments for which available research suggested significant predictive validity⁴.

² Assessment instruments used exclusively within DoD are not included in this research summary. They are presented in Research Summary 2, a review of DoD screening and selection practices.

³³ In a prospective/predictive study, the potential predictor or independent variable is measured prior to the collection of outcome data. By contrast, in a correlational/concurrent study, the independent variable is measured at the same time as the dependent variable, or outcome, precluding any determination of causality.

⁴ Predictive validity refers to a test or score's ability to accurately predict an outcome of interest.

Table 1: Misconduct and Organizationally Problematic Behaviors of Interest

Broad Area of Interest	Keywords used in Literature Search
<i>Misconduct</i>	<ul style="list-style-type: none"> • Antisocial behavior • Attrition • Crime • Counterproductive workplace behavior (CWB) • Misconduct • Sexual assault • Violence

RESULTS

Using the iterative search strategy described above, we identified 17 predictors of misconduct, violence, and other organizationally problematic behavior within the academic research literature (see Table 2). These predictors include five constructs best described as biographical data as well as 12 constructs best described as individual psychological traits. Of the 12 individual psychological traits, nine are risk factors that increase likelihood of misconduct, and three are protective factors inversely related to risk of misconduct. Interestingly, neither sex, race, nor ethnicity emerged as primary predictors of misconduct in this review, although these variables were frequently identified as important covariates that are systematically associated with outcomes. We anticipate addressing sex, race, and ethnicity and describing efforts to address disproportionate impact in the final research summary.

In the following subsections, we describe these 17 constructs and present information on instruments commonly used to assess them. Whenever possible, we highlight research and findings pertaining to military populations. We then present information regarding assessment instruments with well-established predictive validity, focusing on multifaceted instruments that can be used to evaluate many of these constructs simultaneously. Finally, we present detailed information on the psychometric properties of those instruments.

Table 2: List of 17 Constructs Identified as Predictive of Misconduct

Type of Construct	Specific Construct
<i>Biographical data</i>	<ul style="list-style-type: none"> • Alcohol use • Tobacco use • Behavioral history of misconduct or violence • Educational history • Psychiatric history
<i>Individual psychological traits that increase risk of engaging in misconduct (Risk factors)</i>	<ul style="list-style-type: none"> • Authoritarianism • Dishonesty • Disinhibition • Hostility/anger/aggression • Impulsivity • Machiavellianism • Narcissism • Neuroticism • Psychopathy
<i>Individual psychological traits that decrease risk of engaging in misconduct (Protective factors)</i>	<ul style="list-style-type: none"> • Grit • Hardiness • Resilience

BIOGRAPHICAL DATA CONSTRUCTS THAT PREDICT MISCONDUCT

Our review of academic research literature identified five biographical data constructs predictive of misconduct and other organizationally problematic behavior. They are alcohol use, tobacco use, behavioral history of misconduct or violence, educational history, and psychiatric history.

Alcohol Use

Heavy alcohol use by military Service members has consistently emerged as a predictor of behavioral problems such as problematic gambling (Gallaway et al., 2019) and spousal abuse (Bell, Hartford, Fuchs, McCarroll, & Schwartz, 2006). In a study of risk factors for antisocial behavior in the Navy, heavy alcohol use, defined as 30 or more drinks per month and binge drinking 5 or more drinks on one occasion at least weekly, was the strongest identified predictor of disciplinary problems (Booth-Kewley, Larson, Alderton, Farmer, & Highfill-McRoy, 2009). This finding is not unique to the Navy. Within a sample of Marines, alcohol-related problems were predictive of discharge (White, Phillips, Vyas, & Bauer, 2016). Across all Services, heavy drinkers were found to have experienced more serious consequences and greater productivity loss than those who drank less heavily (Mattiko, Olmsted, Brown, & Bray, 2011). Alcohol misuse has been associated with increased odds of committing violence within the active duty Army to include intimate partner/domestic violence, severe violence, and aggression (Elbogen et al., 2012; Elbogen et al., 2014; Marshal, Panuzio, & Taft, 2005), while treatment for an alcohol disorder was associated with increased odds of committing minor and major violent crimes (Rosselini et al., 2017b; Rosselini et al., 2016) as well as increased odds of committing sexual assault (Rosselini et al., 2017a). Alcohol frequently plays a role in sexual assault. In a study of sexual assault cases at the Military Academies, 58% were found to involve alcohol use or abuse (Turchik & Wilson, 2010).

Tobacco Use

Tobacco use has been linked to many problems in military populations, particularly non-violent infractions. Those with a history of chewing or smoking tobacco have been found to be at an increased risk for unsuitability attrition and demotion (Booth-Kewley et al., 2010). In a Navy study, tobacco users were more likely to sign up for short-term enlistments, to leave the Navy without serving their full term of enlistment, and to spend less time overall in Naval service. Tobacco users were also more likely to receive a less-than-honorable discharge; to experience behavioral, personality, sexual, and drug-related punitive discharges; to incur more demotions; and to desert (Conway, Woodruff, & Hervig, 2007).

Tobacco use prior to entry has also been established as a useful predictor of performance during military service. In an Air Force study, the best predictor of early discharge was tobacco use (Klesges, Haddock, Chang, Talcott, & Lando, 2001). In a study of female enlisted personnel going through Marine recruit training, women who used tobacco during the 3 months before entering service had significantly higher rates of attrition (Pollack, Boyer, Betsinger, & Shafer 2009). Another study found that even after controlling for education and aptitude as measured by the Armed Forces Qualification Test (AFQT)⁵ score, both of which are important predictors of service attrition, those who used tobacco prior to entering military service were almost twice as likely to attrite as nonsmokers (Larson, Booth-Kewley, & Ryan, 2007). The authors of this study note that smoking is associated with higher rates of psychosocial and health problems prior to military service and suggest that smoking status should be used as a personnel quality indicator for recruiting and assignment purposes.

⁵ Aptitude requirements for enlistment and induction are based on applicant scores on the AFQT derived from the Armed Services Vocational Aptitude Battery.

Behavioral History of Misconduct and Violence

Within the field of psychology, past behavior is widely understood to be the best predictor of future behavior (Mossman, 1994; Ouellette, & Wood, 1998). Individuals with a history of engaging in misconduct and violence are considered to be at high risk for engaging in future misconduct and violence (Borum, Bartel, & Forth, 2006; Hart, Kropp, Laws, Klaver, Logan, & Watt, 2003; Hanson & Thornton, 2000; White & Meloy, 2006). Background checks are routinely used within employment settings as a relatively simple way to identify individuals with a documented past history of violence and misconduct. Within DoD military Services, all applicants for enlistment and commissioning currently undergo criminal background checks to identify past criminal behavior. Individuals with a significant history of criminal behavior are excluded or required to apply for a moral waiver. Despite enhanced screening, individuals who enter the military with a moral waiver for a pattern of misconduct or for a felony continue to be at heightened risk for misconduct during military service (Galloway, Bell, Lagana-Riordan, Fink, Meyer, & Millikan, 2013), as well as attrition from service due to unsuitability (Connor, 1997; Etcho, 1996).

Criminal background checks are useful in assessing prior behavioral patterns but may be limited in some cases due to inaccessible or sealed records for minors. Fortunately, evidence of prior behavioral history of misconduct and violence can be gathered from a variety of sources. These include clinical records, court and legal records, school records (including records of suspensions, expulsions, and other disciplinary records), and other institutional disciplinary records, as well as self-reported information. Within clinical and forensic settings, psychologists and other trained professionals use these records to assess an individual's risk of future violence.

To conduct such assessments, these professionals often utilize structured professional judgment (SPJ) tools to guide their risk assessment. Examples of commonly used SPJ tools are presented in Table 3. Each of these SPJ tools guide the professional's risk assessment with questions that pertain to past behavior. SPJ tools that have been designed to assess intimate partner violence, such as the Spousal Assault Risk Assessment Guide (SARA-V3; Kropp & Hart, 2015) weigh past intimate partner violence heavily. Similarly, SPJ tools designed to assess risk for sexual violence, such as the Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997) weigh past sexual violence heavily.

Tools that assess past behavioral history of violence and misconduct have been demonstrated to be effective in predicting risk of future violence (Doyle, Power, Coid, Kallis, Ullrich, & Shaw, 2014), intimate partner violence (Messing & Thaller, 2011), sexual violence (de Vogel, de Ruiter, van Beek, & Mead, 2004), and stalking (Shea, McEwan, Strand, & Ogloff, 2018). Though a comprehensive review of each of these SPJ tools is beyond the scope of the current brief literature review, the Hare Psychopathy Checklist-Revised (PCL-R; Hare, 1991), an SPJ tool with well-established predictive validity, is described further in the section on multi-faceted assessments.

Table 3: Examples of Structured Professional Judgement Tools Used in Risk Assessment

Subject Area	Acronym	Full Name	Authors
<i>General Violence</i>	• HCR-20V3	Historical Clinical Risk Management-20, Version 3	Douglas, Hart, Webster, & Belfrage, 2013
	• PCL-R	Hare Psychopathy Checklist- Revised	Hare, 1991
	• START	Short-Term Assessment of Risk and Treatability	Webster et. al., 2006
	• WAVR-21	Workplace Assessment of Violence Risk-21	White & Meloy, 2007
<i>Intimate Partner Violence</i>	• B-SAFER	Brief Spousal Assault Form for the Evaluation of Risk	Kropp, Hart, & Belfrage, 2005
	• DVSIR	Domestic Violence Screening Instrument – Revised	Williams & Grant, 2006
	• DVRAG	Domestic Violence Risk Appraisal Guide	Hilton, et. al., 2008
	• ODARA	Ontario Domestic Assault Risk Assessment	Hilton, et. al., 2004
	• SARA-V3	Spousal Assault Risk Assessment Guide, Version 3	Kropp & Hart, 2015
<i>Sexual Violence</i>	• RSVP	Risk for Sexual Violence Protocol	Hart, et. al., 2003
	• SVR-20	Sexual Violence Risk -20	Boer, Hart, Kropp, & Webster, 1997
<i>Stalking</i>	• SAM	Stalking Assessment and Management	Kropp, Hart, & Lyon, 2008
	• SRP	Stalking Risk Profile	MacKenzie, et. al., 2009
<i>Youth Violence</i>	• SAVRY	Structured Assessment of Violence Risk in Youth	Borum, Bartel, & Forth, 2006

Educational History

One of the most well-established predictors of success in military service is prior education. Possession of a high school diploma or equivalent is desirable for enlistment. Title 10, United States Code, Section 520 states that a person who is not a high school graduate may not be accepted for enlistment in the Military Services unless the score of that person on the AFQT is at or above the thirty-first percentile. This policy reflects the wide body of research suggesting that individuals entering service without a high school diploma have markedly higher attrition than high school graduates (Buddin, 1984; Cardona & Ritchie, 2006), both within the first year (Booth-Kewley, Larson, & Ryan, 2002) and the first term of service (Strickland, 2005). In an early Air Force study that examined completion of basic training, attrition rates differed significantly for groups with and without a high school diploma. In this study, discharge rates from basic training for Airmen without a high school diploma were 18% compared to just 3% for those with a diploma (Flyer, 1959).

Those entering service without a high school diploma are also at increased risk for specific types of attrition such as medical, behavioral, and administrative attrition (Booth-Kewley, et al., 2002) as well as demotion (Booth-Kewley, Highfill-McRoy, Larson, & Garland, 2010). Moreover, a lower level of education has been consistently associated with increased odds of committing sexual assault, violent crime, and engaging in documented violence and interpersonal aggression during military service (Elbogen, Wagner, Kimbrel, Brancu, Naylor, & Graziano, 2018; Rosselini et al., 2016; Rosellini et al., 2017a, Rosselini et al., 2017b).

Studies also indicate that education beyond a high school diploma provides additional protection against military attrition. In a study of those with the highest AFQT scores (Tier I), military service attrition rates for college graduates were 9%, while rates of attrition for high school graduates without a college degree were 16% (White, Rumsey, Mullins, Nye, & Laport, 2014). Together, these studies indicate that educational attainment is an important predictor of success in military service and that individuals without a high school education are at increased risk for problems ranging from attrition to violent behavior.

Psychiatric History

Psychiatric diagnosis and treatment, both prior to and during military service, are well-established predictors of attrition from military service (Knapik, Jones, Hauret, Darakjy, & Piskator, 2004; Larson, Booth-Kewley, & Ryan, 2002) and unsuitability attrition in particular (Booth-Kewley et al., 2010). Air Force trainees with any history of mental health counseling, treatment with medication, and psychiatric hospitalization prior to military service were at increased risk of attrition (Englert, Hunter, & Sweeney, 2003). Nearly half of trainees who received a mental health evaluation during Basic Military Training (BMT) failed to complete BMT (Carbone, Cigrang, Todd, & Fiedler, 1999), while two-thirds failed to complete their first term of service (Cigrang, Carbone, & Lara, 2003). Service members most likely to be recommended for discharge included those with depressive disorders, adjustment disorders, post-traumatic stress disorder (PTSD), alcohol abuse, anxiety disorders, and attention deficit hyperactivity disorder (ADHD) (Cigrang, Carbone, Todd, & Fiedler, 1998).

Mental health conditions and a history of mental health treatment have also been linked to other problems during military service. Military Service members with any mental health diagnosis have been identified as more likely to run red lights, disregard the speed limit, and drive drunk (Hoggatt et al., 2015). Within the active duty Army, treatment for any mental health disorder was identified as a risk factor for committing violent crimes, including sexual assault (Rosellini et al., 2016; Rosellini et al., 2017a; Rosellini et al., 2017b). Diagnoses of personality disorders and depression were also associated with increased odds of committing domestic violence within the active duty Army (Elbogen et al., 2010).

INDIVIDUAL PSYCHOLOGICAL TRAITS THAT PREDICT MISCONDUCT

Of the 12 individual psychological traits identified through this review as predictive of misconduct, nine can be classified as risk factors (problematic traits that increase risk of engaging in misconduct), and three can be classified as protective factors (desirable traits inversely related to the risk of misconduct). Risk factors identified in the review as predictive of misconduct are authoritarianism, dishonesty, disinhibition, hostility, impulsivity, Machiavellianism, narcissism, neuroticism, and psychopathy. Each of these traits exists on a continuum such that an individual may have a high, moderate, or low level of that trait. Although some of these traits tend to be more prevalent among individuals with certain mental health diagnoses (e.g., higher levels of impulsivity are frequently seen in individuals diagnosed with ADHD; higher levels of psychopathy are frequently seen in individuals with Antisocial Personality Disorder) none of these individual trait constructs represent a mental health diagnosis and individuals may score high on any of these traits without a corresponding mental health diagnosis or disorder.

Authoritarianism

Authoritarianism is a complex of personality characteristics that includes intolerance of opposing views, rigid attachment to traditional values, antidemocratic social attitudes, and uncritical acceptance of authority (APA, 2019). Within the academic research literature, those who score high on measures of authoritarianism are more likely to condone violent, unjust, and prejudiced behavior (Altemeyer & Hunsberger, 1992), to self-report past and potential future sexually aggressive behavior (Walker, Rowe, & Quinsey, 1993), to engage in sexual harassment, and to endorse acceptance of rape myths (Begany & Milburn, 2002). Authoritarianism is a demonstrated predictor of prejudice against women, Black Americans, and lesbian, gay, and bisexual people (Altemeyer, 1988).

Instruments commonly used to measure authoritarianism include the Right-Wing Authoritarianism Scale (RWAS; Altemeyer, 1981)⁶ and the Religious Fundamentalism Scale (RFS-12; Altemeyer & Hunsberger, 2004).

Dishonesty

Dishonesty is a personality or character trait that reflects lack of truthfulness or integrity (Merriam Webster, 2020). It is a useful predictor of problematic behavior ranging from delinquency (Stouthamer-Loeber & Loeber, 1988) to employee theft (Jones & Terris, 1983). In studies examining the development of delinquency, dishonesty has been identified as one of the earliest precursors of antisocial behavior (Stouthamer-Loeber, 1986) and both parent and peer reports of children's dishonesty have been found to predict later delinquency (Stouthamer-Loeber, 1988). Within employment settings, applicants who score high on a measure of dishonest attitudes and cognitions have been found to be more likely to engage in CWBs (Jones & Terris, 1983), including waste and damage to Government property (Moretti, 1986). Dishonesty has also been linked to coercive sexual relations. A survey of college men found that perpetrators of forceful coercive sexual relations reported frequently using deception to obtain sex with an unwilling partner (Struckman-Johnson, Struckman-Johnson, & Anderson, 2003).

Instruments commonly used to assess dishonesty include the Moral Disengagement Scale (Moore, Detert, Kelbe Trevino, Baker, & Mayer, 2012), the Moral Attentiveness Scale (Reynolds, 2008), the Minnesota Multiphasic Personality Inventory – II (MMPI-II: Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), Personality Assessment Inventory (PAI: Morey, 1991), and the Personnel Selection Inventory (PSI: Moretti, 1986). The PSI contains an Honesty scale designed to assess the likelihood that an individual will engage in workplace theft.

Disinhibition

Disinhibition is defined as the inability or unwillingness to control behavioral impulses (APA, 2019). Within the academic research literature, disinhibition is frequently identified as a predictor of problematic outcomes ranging from substance abuse (Miller, Vogt, Mozley, Kaloupek, & Keane, 2006; Willis et al., 2013) to conduct problems (Neal & Carey, 2007). Disinhibition has been identified as a moderator of the relationship between alcohol use and conduct problems by increasing the strength of these associations (Neal & Carey, 2007). Disinhibition has also been found to confer risk for engagement in risky and self-destructive behaviors in Veterans with high levels of PTSD symptoms (Sadeh, Spielberger, & Hayes, 2018). Additionally, a meta-analytic study by Sher & Trull (1994) identified disinhibition as a useful predictor of poor academic adjustment and school failure.

Instruments commonly used to measure disinhibition include the Balloon Analogue Risk Task (BART; Lejuez et al., 2002), the Stop Signal Task (Bitsakou, Psychogiou, Thompson, & Sonuga-Barke, 2008), the Self-Regulation Questionnaire Short Form (SSRQ; Carey, Neal, & Collins, 2004), and the Impaired Control Scale (ICS; Heather, Booth, & Luce, 1998). Disinhibition is also commonly assessed using the Disinhibition scale of the Personality Inventory for DSM-5 (Krueger, Derringer, Markon, Watson, & Skodol, 2012), the MMPI-2 (Butcher et al., 1989), PAI (Morey, 1991), and the PSI (London House, 1975).

Hostility/Anger/Aggression

Hostility is a multidimensional concept with affective (i.e., anger), behavioral (i.e., aggression), and cognitive (i.e., negative beliefs about and attitudes toward others) components (APA, 2019). Hostility, anger, and aggression all emerged as important predictors of misconduct and violence. Within a sample of U.S. Sailors, hostility was found to

⁶ Within the scientific literature on authoritarianism, the term “right wing” does not equate to the popular term “right-wing politics” or indicate a conservative political stance. Rather, this term refers to anyone who submits to perceived authority, is rigid in their adherence to social conventions, and is hostile and punitive to those perceived as not adhering to these conventions.

predict disciplinary incidents. Those scoring high on hostility were nearly twice as likely as low scorers to have disciplinary problems (Booth-Kewley et al., 2009). In recidivism studies with incarcerated individuals, hostility was repeatedly identified as a robust predictor of misconduct and violence in prisons (Dolan & Blackburn, 2006; Gardner, Bocaccini, Bitting, & Edens, 2015) as well as a robust predictor of recidivism and violent recidivism post release (Ruiz, Cox, Magyar, & Edens, 2014). Hostility is predictive of violent sexual recidivism among sex offenders who were followed for an average of 18 years post release (Olver, Nicholaichuk, & Wong, 2014).

A review of the academic research literature identified more than 26 unique measures of hostility, anger, and aggression. These include the Multidimensional Anger Inventory (Siegel, 1986), the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988), the Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957), the MMPI-2 (Butcher et al., 1989), the PAI (Morey, 1991), and the PSI (London House, 1975).

Impulsivity

Impulsivity is a character trait that describes the tendency to engage in behavior with little or no forethought, reflection, or consideration for consequences (APA, 2019). Impulsivity correlates strongly with deviant, delinquent, and criminal behavior such as spousal assault (Grann & Wedin, 2002) and problematic gambling (Nower, Derevensky, & Gupta, 2004). Within a study of active duty Army Soldiers, serious problems with impulsivity leading to the diagnosis of an impulse control disorder were associated with increased odds of committing sexual assault (Rosellini et al., 2017). Within a group of Sailors, high impulsivity was identified as an important risk factor for engaging in antisocial behavior (Booth-Kewley, Larson, Alderton, Farmer, & Highfill-McRoy, 2009).

Commonly used instruments for assessing impulsivity include the Barratt Impulsiveness Scale (BIS-11; Patton, et al., 1995), Monetary Choice Questionnaire (MCQ; Kirby, Petry, & Bickel, 1999), and the Eysenck Impulsivity Scale (Eysenck & Eysenck, 1977). Impulsivity is also frequently assessed using the MMPI-II (Butcher et al., 1989), the PAI (Morey, 1991), and the PSI (London House, 1975).

Machiavellianism

Machiavellianism is a psychological construct that describes the extent to which an individual endorses the belief that any means can justifiably be used to achieve power, however unscrupulous (APA, 2019). Machiavellianism is one of three traits—along with narcissism and psychopathy—that comprise a psychological construct known as the Dark Triad⁷ (Jones & Paulhus, 2014). The Dark Triad is thought to underlie antisocial behavior and is linked to aggression, lack of empathy, impulsivity, and sexual aggression (APA, 2019). Key elements of Machiavellianism include manipulation of others, callous affect, and a strategic-calculating orientation. In a meta-analysis by Forsyth, Banks, & McDaniel (2012), Machiavellianism was associated with increased CWBs as well as decreased job performance quality.

Machiavellian characteristics have been shown to be particularly problematic within certain organizational settings. For example, individuals who have high levels of Machiavellianism *and* experience abusive supervision are at heightened risk of engaging in unethical workplace behavior compared to those in the same abusive environment who score low on Machiavellianism (Greenbaum, Hill, Mawritz, & Quade, 2017). While Machiavellianism has not been widely studied in military populations, a recent study of Swedish Soldiers deployed to Mali found that

⁷ Some researchers have suggested expanding the Dark Triad to include a fourth dark trait—sadism, defined as the enjoyment of cruelty. Sadism shares a number of characteristics with psychopathy such as lack of empathy and willingness to inflict suffering. Although it did not emerge as one of the key predictors of misconduct and violence in this review, several studies indicate that sadism predicts delinquent behavior (Mededovic & Petrovic, 2015) and unprovoked aggression (Reidy, Zeichner, & Seibert, 2011). It also adds incremental validity to the prediction of antisocial behavior beyond the current Dark Triad constructs (Chabrol, Van Leeuwen, Rodgers, & Sejourne, 2009).

Machiavellianism was predictive of moral transgressions during peacekeeping missions (Linden, Bjorklund, Backstrom, Messervey, & Whetham, 2019).

Instruments commonly used to measure Machiavellianism include the Machiavellianism Scale (MACH IV; Dahling, Whitaker, & Levy, 2009), the Dirty Dozen (DD; Jonason & Webster, 2010), and the Short Dark Triad (SD3; Jones & Paulhus, 2014).

Narcissism

Within the field of psychology, narcissism is defined as pathological self-absorption, vanity, and a false sense of omnipotence (APA, 2019). Narcissism involves a sense of entitlement, a need for admiration, and a lack of empathy for others. Although this is a dimensional construct that exists on a spectrum, individuals high in narcissism may be diagnosed with Narcissistic Personality Disorder (NPD), a disorder marked by a pattern of grandiosity, need for admiration, and lack of empathy for others (APA, 2013). According to the most recent edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-V), prevalence estimates for Narcissistic Personality Disorder may be as high as 6.2% in community samples (APA, 2013). Narcissism has been linked to perpetration of sexual assault across several studies (Kosson, Kelly, & White, 1997; Mouilso & Calhoun, 2012a). In one study of college-age men, narcissism was associated with perpetration of sexual assault and effectively distinguished perpetrators from nonperpetrators (Mouilso & Calhoun, 2012a). In a related study, men who scored high on self-report measures of narcissistic traits were more likely to report sexual assault perpetration (Mouilso & Calhoun, 2012b).

Instruments commonly used to measure narcissism include the SD3 (Jones & Paulhus, 2014), the DD (Jonason & Webster, 2010), the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), the NPD subscale of the Structured Clinical Interview for DSM Disorders-II Personality Questionnaire (SCID-N; First, Gibbon, Spitzer, Williams, & Benjamin, 1997), and the Hypersensitive Narcissism Scale (Hendin & Cheek, 1997).

Neuroticism

Neuroticism is a character or personality trait that describes the degree to which a person experiences the world as distressing, threatening, and unsafe. Neuroticism is a dimensional construct, with one end of the spectrum (low neuroticism) representing emotional stability and the other end (high neuroticism) representing emotional chaos (APA, 2019). Neuroticism is one of the core concepts that make up the widely accepted Big Five model of personality, which also includes openness to experience, conscientiousness, extraversion, and agreeableness (Goldberg, 1990). Two independent studies of incarcerated sex offenders found that perpetrators of sexual assault reported significantly higher scores on self-report measures of neuroticism than did nonperpetrators (Dennison, Stough, & Birgden, 2001; Lehne, 2002). Neuroticism has also been identified as an important risk factor in committing intimate partner violence (Hellmuth & McNulty, 2008). In a prospective analysis, high neuroticism was identified as a significant predictor of attrition from basic military training in a sample of more than 5,000 Canadian Forces recruits (Lee, McCreary, & Villeneuve, 2011).

Instruments commonly used to measure neuroticism include the Big-Five Inventory (BFI; John, Donahue, & Kentle, 1991), the NEO Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992), the MMPI-II (Butcher et al., 1989), the PAI (Morey, 1991), and the PSI (London House, 1975).

Psychopathy

Psychopathy is a psychological construct defined by a pattern of affective, interpersonal, and behavioral characteristics. These characteristics include egocentricity; deception; manipulation; irresponsibility; impulsivity; stimulation-seeking; poor behavioral controls; shallow affect; a lack of empathy, guilt, or remorse; and a range of unethical and antisocial behaviors that may or may not be criminal in nature (Neumann & Hare, 2008). These

features begin to manifest early in childhood and are believed to be relatively stable throughout adolescence and into adulthood (Larsson, Tuvblad, Rijdsdijk, Andershed, Grann, & Lichtenstein, 2007; Viding, Frick, & Plomin, 2007). The overall construct of psychopathy is underpinned by three factors—arrogant and deceitful interpersonal style, deficient affective experience, and impulsive and irresponsible behavioral style (Cooke & Michie, 2001). The prevalence of psychopathic traits is estimated to be approximately 1% in the general population of the United States (Neuman & Hare, 2008) and about 15-25% in the prison population (Hare, 1999).

Psychopathy is one of the most consistently identified predictors of misconduct, CWBs, violence, and sexual assault. In a prospective empirical study conducted with an adolescent sample, psychopathy predicted antisocial outcomes involving both general and violent recidivism across a 3- to 4-year time span, even after controlling for 14 other variables theoretically linked to offending (Salekin, 2008). This study, which utilized three self-report measures of psychopathy and one clinician-administered measure, found that self-report measures were as effective as the clinician-administered measure in predicting recidivism. Another prospective study that used a sample of 300 convicted male offenders to explore the impact of psychopathy on recidivism over a period of 7.8 years found that psychopathy is a valid predictor of both general and violent recidivism (Serin & Amos, 1995). In this study, the rate of violent re-offending was 35% among those scoring high on psychopathy (31 or higher on the PCL-R) compared to only 5% among nonpsychopaths.

Instruments commonly used to assess psychopathy include the PCL-R (Hare, 1991), the Antisocial Process Screening Device (Frick & Hare, 2001), the Hare Self-Report Psychopathy Scale–III (SRP-III; Paulhus, Neumann, & Hare, in press), the PAI–Antisocial Scale (Morey, 1991, 2007), the SD3 (Jones & Paulhus, 2014), and the DD (Jonason & Webster, 2010).

INDIVIDUAL PSYCHOLOGICAL TRAITS THAT DECREASE RISK OF MISCONDUCT

Three positive individual psychological traits that show inverse associations with misconduct and related behavioral problems emerged from the literature review—grit, hardiness, and resilience.

Grit

Grit is defined as courage, resolve, and perseverance in attaining long-term goals (APA, 2019). Grit has been shown to predict retention across a wide variety of employment contexts. In a longitudinal performance study, grit predicted retention across a range of contexts, including military service (Eskreis-Winkler et al., 2014). Soldiers scoring high in grit were significantly more likely to complete an Army Special Operations Forces (ARSOF) selection course than low scorers (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014). In a study of more than 2,500 U.S. Military Academy West Point cadets, grit outperformed the Whole Candidate score, the composite score used by West Point to admit candidates, in predicting retention (Duckworth, Peterson, Matthews, & Kelly, 2007). Those who scored a standard deviation higher than average on grit were more than 60% more likely to complete training.

Instruments commonly used to assess grit include the Grit Scale (Duckworth et al., 2007) and the Short Grit Scale (GRIT-S; Duckworth & Quinn, 2009).

Hardiness

The construct of hardiness describes the ability to endure difficult conditions (APA, 2019). Hardiness has consistently emerged as a stress buffer in military groups including U.S. Army casualty assistance workers (Bartone, Ursano, Wright, & Ingraham, 1989), peacekeeping Soldiers (Britt, Adler, & Bartone, 2001), Army Reservists deployed to the Persian Gulf (Bartone, 1999), Israeli officer candidates (Westman, 1990), and Norwegian Navy cadets (Bartone, Johnsen, Eid, Brun, & Laberg, 2006). Hardiness has been shown to be inversely related to authoritarianism, a

negative individual trait linked to increased risk of misconduct (Maddi, Harvey, Khoshaba, Lu, Perisco, & Brow, 2006).

Hardiness is commonly assessed using the Hardiness Questionnaire (Kobasa, 1979) and the Personal View Survey III-R (Maddi et al., 2006).

Resilience

Resilience refers to the capacity to recover quickly from difficulties or to adapt well in the face of adversity, trauma, tragedy, threat, or stress (APA, 2019). Among Service members, high resilience is associated with both career and personal success as well as decreased mental health symptoms and lower risk of participating in risky behaviors such as drinking to excess, driving at high speeds, and using illegal substances (Simmons & Yoder, 2013). In a prospective study of more than 50,000 Air Force basic trainees, low resilience was predictive of attrition during the first 6 months of service as well as diagnosis with a mental health disorder within the first 6 months of service (Bezdjian, Schneider, Burchett, Baker, & Garb, 2017).

Resilience is commonly assessed using the Dispositional Resilience Scale (DRS-15; Bartone, 2007), the Connor Davidson Resilience Scale (CD-RISC: Connor & Davidson, 2003), and the Resilience Scale for Adults (RSA; Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003).

ASSESSMENT INSTRUMENTS WITH WELL-ESTABLISHED PREDICTIVE VALIDITY

The second half of this research summary focuses on assessment instruments that have demonstrated utility in predicting misconduct, violence, and other organizationally problematic behavior. It then describes the psychometric properties of these instruments. Given the large number of predictors identified in this review of the academic research literature, as well as the even larger number of assessment instruments available to measure each construct, it is not possible to review every available assessment instrument for the purposes of this brief research summary. Instead, this section focuses on seven assessment instruments that measure multiple constructs linked to increased risk of misconduct.

Although our review did not reveal any assessment instrument that measures all 17 of the identified predictive constructs, we did identify seven assessment instruments that maximize predictive validity by assessing multiple predictors concurrently. Table 4 presents these seven assessment instruments and indicates which of the 17 predictive constructs identified in this report are assessed with the instrument. We begin by examining assessments of the Dark Triad traits, before turning to other multifaceted assessments.

Table 4: Highlighted Assessment Instruments Measuring Multiple Constructs Predictive of Misconduct

Assessment Instrument	Constructs (of 17 identified in the review)
Hare Psychopathy Checklist Revised (PCL-R; Hare, 1991)	<ul style="list-style-type: none"> • Behavioral history of misconduct and violence • Psychopathy
Hare Self-Report Psychopathy Scale (SRP-III; Paulhus, Neumann, & Hare 2017)	<ul style="list-style-type: none"> • Behavioral history of misconduct and violence • Psychopathy
Dirty Dozen (DD; Jonason & Webster, 2010)	<ul style="list-style-type: none"> • Behavioral history of misconduct and violence • Machiavellianism • Narcissism • Psychopathy
Short Dark Triad (SD3; Jones & Paulhus, 2014)	<ul style="list-style-type: none"> • Behavioral history of misconduct and violence • Machiavellianism • Narcissism

Minnesota Multiphasic Personality Inventory-II (MMPI-II; Butcher et al., 1989) and MMPI-II Restructured Form (MMPI-II-RF; Ben Porath & Tellegen, 2008)	<ul style="list-style-type: none"> • Psychopathy • Alcohol use • Behavioral history of misconduct and violence • Psychiatric history • Dishonesty • Disinhibition • Hostility/anger/aggression • Impulsivity • Narcissism • Neuroticism • Psychopathy
Personality Assessment Inventory (PAI; Morey, 1991)	<ul style="list-style-type: none"> • Alcohol use • Behavioral history of misconduct and violence • Psychiatric history • Dishonesty • Hostility/anger/aggression • Neuroticism
Personnel Selection Inventory (PSI; London House, 1975)	<ul style="list-style-type: none"> • Behavioral history of misconduct and violence • Dishonesty

Note. Aside from the PCL-R (Hare, 1991), a well-known SPJ tool, assessment instruments listed here use self-report and do not require clinician support to administer and evaluate. Self-report assessments could be used to screen a large population of personnel; SPJ tools like the PCL-R are only practical in smaller, targeted populations.

The Dark Triad: Assessing Psychopathy, Narcissism, and Machiavellianism

Three of the individual-level constructs identified in this literature review—psychopathy, narcissism, and Machiavellianism—are frequently assessed together as components of the “Dark Triad” of personality traits (Paulhus & Williams, 2002). Although these three constructs are distinct, individuals with these traits tend to be interpersonally manipulative and emotionally callous and are known to engage in both impulsive and risky behaviors, placing them at high risk for misconduct and violence. Jones and Paulhus (2011) describe the relation between the constructs—all three involve callous affect and interpersonal manipulation, but psychopathy involves an element of impulsivity not seen in narcissism or Machiavellianism, while narcissism is driven by the need to feel special or important rather than by instrumental goals seen with psychopathy or Machiavellianism. These constructs can be assessed independently with individual measures such as the Hare PCL-R (Hare, 1991) for the assessment of psychopathy or together using multifaceted assessments such as the DD (Jonason & Webster, 2010) and SD3 (Jones & Paulhus, 2014). Given the importance of these three traits in predicting misconduct and violence, the following four subsections focus on the individual assessment of psychopathy as well as multifaceted assessments that assess narcissism and Machiavellianism in addition to psychopathy.

The Hare Psychopathy Checklist Revised (PCL-R)

The gold standard in assessing psychopathy is the PCL-R (Hare, 1991), a 20-item SPJ tool that is completed by a qualified clinician following a semi-structured interview and review of collateral information, such as criminal records. The majority of psychopathy research has been conducted with incarcerated criminal populations (Hare, 1985; Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990), but the tool has proven to be useful for assessing psychopathy within community samples as well (Forth, Brown, Hart, & Hare, 1996). There is some debate about the factor structure⁸ of the PCL-R, with researchers identifying two-, three-, and four-factor models (Mahmut, Menictas,

⁸ Factor structure refers to the correlational relationships between variables that measure a particular construct.

Stevenson, & Homewood, 2011). The most commonly cited factor structure involves three factors—arrogant and deceitful interpersonal style, deficient affective experience, and impulsive/irresponsible behavioral style (Cooke & Michie, 2001). The PCL-R has evidenced good convergent⁹ and discriminant¹⁰ validity in samples of both male (Hare et al., 1990) and female offenders (Salekin, Rogers, Ustad, & Sewell, 1998). A recent review paper, which included 17 predictive validity studies on the PCL, concluded that the PCL total scale score was a statistically significant predictor of general recidivism, violent recidivism, sexual recidivism, and institutional misconduct (Larsen, Jalava, & Griffiths, 2020).

While the PCL-R specifically assesses psychopathy, it is important to note that the instrument also taps other individual-level predictors identified in this literature review. Psychopathy, by definition, involves impulsivity, disinhibition, dishonesty, and hostility, anger, and aggression. The PCL-R also heavily weighs past behavioral history of misconduct and violence.

The Hare Self-Report Psychopathy Scale (SRP-III)

Despite its strong psychometrics and demonstrated predictive ability, there are limitations to the use of the PCL-R for widespread screening most notably that it requires extensive clinician training, access to collateral records, and is time consuming to complete. As a result, considerable efforts have been made to develop self-report measures of psychopathy. The most widely used self-report measure of psychopathy is the Hare Self-Report Psychopathy Scale (SRP-III; Paulhus, Neumann, & Hare 2017), a 64-item instrument on which respondents rate statements on a five-point scale (from strongly disagree to strongly agree) The SRP-III has demonstrated good convergent and discriminant validity and viability as a measure to assess psychopathy in community and nonforensic samples and appears to have a factor structure similar to that of the PCL-R (Mahmut et al., 2011). These four factors correspond to four subscale scores: interpersonal manipulation (IPM), callous affect (CA), erratic lifestyle (ELS), and antisocial behavior (ASB). An abbreviated version of the measure, the Self-Report Psychopathy Scale- Short Form (SRP-SF) has also been developed and has demonstrated a good fit for the four-factor model within community samples (Gordts, Uzieblo, Neumann, Van den Bussche, & Rossi, 2017).

Like the PCL-R, the SRP-III is specifically a measure of psychopathy. However, the instrument also incorporates assessment of other predictors identified in this review, including behavioral history of misconduct or violence, impulsivity, disinhibition, dishonesty, and hostility/anger/ aggression, because as noted previously, these constructs are essential components of psychopathy.

The Dirty Dozen (DD)

The DD (Jonason & Webster, 2010) is a very brief 12-item self-report assessment instrument designed to assess psychopathy, narcissism, and Machiavellianism. It contains three scales of four items each that correspond to the three Dark Traits. Respondents rate themselves on face-valid items such as “I tend to manipulate others to get my way.” The overlap or correlation between the three identified factors is modest, suggesting that the instrument is indeed measuring three separate constructs. Overall, the DD demonstrates good test-retest reliability¹¹, good internal consistency¹² (alpha of .83), and good discriminant validity (Jonason & Webster, 2010; Maples, Lamkin, & Miller, 2014). Examinations of convergent validity suggest that the DD shows some convergent validity with measures of aggression ($r=.51$), indicating that those scoring high on the DD also use aggression to achieve their goals.

⁹ Convergent validity demonstrates that theoretically related constructs are indeed correlated with one another.

¹⁰ Discriminant validity demonstrates that theoretically unrelated concepts are indeed not correlated.

¹¹ Test-retest reliability is a measure of the stability of test responses over time and is obtained by administering the same test twice over a period of time.

¹² Internal consistency describes how reliably items on an assessment that are meant to measure the same construct actually do.

The Short Dark Triad (SD3)

The SD3 is a brief 27-item self-report measure of narcissism, Machiavellianism, and psychopathy (Jones & Paulhus, 2014). The instrument was developed using community and student samples and is intended for use with nonforensic populations. The SD3 is structured as three nine-item scales with positive, moderate intercorrelations that demonstrate modest but acceptable reliabilities (alphas ranging from .71 to .77). All items have been shown to load onto the factors as hypothesized (Jones & Paulhus, 2014). The SD3 evidences good concurrent validities¹³ with its criterion counterparts (.82 to .92) and good construct validity¹⁴ for the SD3 subscales. The construct validity of the SD3 has been established across dozens of studies and has been shown to predict outcomes such as partner aggression (Hamel, Jones, Dutton, & Graham-Kevan, 2015) and bullying (Baughman, Dearing, Giammarco, & Vernon, 2012).

This instrument was developed for use in low-stakes settings, and research conducted with the instrument in high-stakes job application settings suggests that caution should be used, particularly in interpreting the Machiavellianism subscale. This trait is characterized by manipulateness and strategic-calculating orientation, which may be activated in high-stakes settings (Grigoras, Butucescu, Miulescu, Opariuc-Dan, & Iliescu, 2020). Notably, a recent study examining the association between the Dark Triad traits and duplicity found that all three Dark Traits predicted cheating in a laboratory experiment (ORs= 1.26, 1.45, and 1.50) but that only psychopathy predicted cheating when perceived risk of being caught was high (OR=1.65), further highlighting the risk-taking nature of psychopathy (Jones & Paulhus, 2017).

Other Multifaceted Assessment Instruments That Predict Misconduct and Violence

In addition to the four assessment instruments that measure the Dark Triad traits of Machiavellianism, narcissism, and psychopathy, three additional assessment instruments emerged in this review as essential tools in predicting misconduct, violence, and other organizationally problematic behavior. These multifaceted assessment instruments are the Minnesota Multiphasic Personality Inventory-II (MMPI-II; Butcher, et al., 1989), the PAI (Morey, 1991), and the PSI (London House, 1975).

The Minnesota Multiphasic Personality Inventory-II (MMPI-II) and MMPI-II Restructured Form (MMPI-II-RF)

The MMPI-II (Butcher et al., 1989) is a standardized psychometric test of adult personality and psychopathology that contains 567 true/false items. It is one of the most frequently used tests in the field of psychology and is often used for screening and selection for sensitive employment positions such as law enforcement (Sellbom, Fischler, & Ben-Porath, 2007; Caillouet, Boccaccini, Varela, Davis, & Rostow, 2010). The MMPI-II is designed at a sixth-grade reading level and takes 1 to 2 hours to complete. In 2008, a restructured form of the MMPI was introduced. The Minnesota Multiphasic Personality Inventory–II- Restructured Form (MMPI-II-RF; Ben Porath & Tellegen, 2008) was designed to improve discriminant validity. It is significantly shorter than the MMPI-II, containing just 338 true/false items.

The MMPI-II and MMPI-II-RF are useful in assigning clinical diagnoses but can also be used to assess personality characteristics within the general (nonclinical) population. The instruments contain five types of scales—clinical scales, content scales, supplemental scales, personality psychopathology scales, and validity scales. MMPI-II clinical scales and MMPI-II-RF restructured clinical scales focus on mental health symptoms that correspond to particular psychiatric disorders. The restructured clinical scales of the MMPI-II-RF include scales assessing demoralization, somatic complaints, low positive emotions, cynicism, antisocial behavior, ideas of persecution, dysfunctional negative emotions, aberrant experiences, and hypomanic activation (e.g., aggression, excitability). MMPI-II and

¹³ Concurrent validity describes how well an assessment tool compares to another well-established assessment tool.

¹⁴ Construct validity describes how well a test measures the construct it claims to measure.

MMPI-II-RF also offer a number of content and supplemental scales as well as five personality pathology scales—aggressiveness, psychoticism, constraint, negative emotionality/neuroticism, and positive emotionality/extraversion. The MMPI-II and MMPI-II-RF contain three basic types of validity scales—those designed to detect nonresponding or inconsistent responding, those designed to detect overreporting or exaggeration, and those designed to detect underreporting or downplaying of psychological symptoms. This last set of validity scales is particularly important within an employment context, in which respondents are incentivized to portray themselves in the best light possible.

The MMPI-II and MMPI-II-RF are often considered “gold standards” of psychological assessment because they have demonstrated strong internal consistency (Arnau, Handel, & Archer, 2005; Harkness, McNulty, & Ben-Porath, 2002; Wise, Streiner, & Walfish, 2010; Wygant, Sellbom, Graham, & Schenk, 2006), good test-retest reliability (Colotla, Bowman, & Shercliffe, 2001), and good construct validity (Boone, 1994; Sellbom & Ben-Porath, 2005; Wetter, Baer, Berry, Smith, & Larsen, 1992). Additionally, the integration of validity scales into the instrument provides a significant advantage over other self-report instruments that do not attempt to gauge the accuracy of the information that is self-reported. Numerous studies have shown that the MMPI-II and MMPI-II-RF validity scales are effective in identifying malingering (faking) and exhibit good sensitivity¹⁵ (Wygant, Anderson, Sellbom, Rapier, Allgeier, & Granacher, 2001; Sellbom, Toomey, Wygant, Kucharski, & Duncan, 2010). Notably, the MMPI-II-RF has been shown to effectively detect attempts to misrepresent oneself even among individuals high in psychopathy. In one study, those scoring high on the callous-aggressive component of psychopathy actually performed worse than those low on these traits when trying to avoid detection (Marion, Sellbom, Salekin, Toomey, Kucharski, & Duncan, 2013).

Predictive validity studies conducted with police candidates are highly relevant to the consideration of instrument adoption for military applicants, given the similar sensitive nature of these positions. The MMPI-II is the most commonly used psychological assessment in police recruitment (Dantzker & McCoy, 2006). Multiple MMPI-II scales, including Aggression, Disconstraint (impulsivity), and Neuroticism, have been identified as predictive of police misconduct, including abuse of authority, conduct unbecoming, abuse of sick leave, inappropriate sexual attitudes or behavior, use of excessive force, and biased attitudes toward others (Caillouet, et al., 2010; Sellbom, Fischler, & Ben-Porath, 2007). Administration of the MMPI-II-RF prior to hiring police candidates has also been shown to predict performance ratings by supervisors following hiring, with emotional dysfunction scales (e.g., neuroticism, anger) and interpersonal scales demonstrating the most robust predictions of supervisor ratings, with those scoring high on emotional dysfunction scales earning the poorest ratings (Tarescavage, Brewster, Corey, & Ben-Porath, 2015).

Overall, the MMPI-II and MMPI-II-RF incorporate assessment of many of the individual-level predictors identified in this literature review as important predictors of misconduct and other problematic behavior. These instruments assess alcohol use, psychiatric history, dishonesty, disinhibition, hostility/anger/aggression, impulsivity, and neuroticism as well as antisocial behaviors linked to psychopathy.

The Personality Assessment Inventory (PAI)

The PAI (Morey, 1991) is a 344-item self-report instrument designed to assess both personality and psychopathology. Respondents rate each of the 344 items on a 1 to 4 scale indicating that the statement is not true at all to very true. Results yield 22 non-overlapping scales including validity scales, clinical scales, treatment consideration scales, and interpersonal scales. Like the MMPI-II and MMPI-II-RF, the PAI contains validity scales that measure the respondent’s overall approach to the test and are used to detect exaggeration, defensiveness, carelessness in responding, and random responding. Clinical scales measure the respondent’s psychopathology in a

¹⁵ Test sensitivity refers to the ability of a test to correctly identify those with the condition (the true positive rate.)

variety of areas, including somatic complaints, anxiety, depression, mania, paranoia, schizophrenia, borderline features, antisocial features, alcohol problems, and drug problems. Treatment consideration scales measure additional risk factors that are not specific to psychiatric diagnoses such as aggression, suicidal ideation, stress, nonsupport, and treatment rejection. Finally, interpersonal scales measure two important areas of interpersonal functioning—dominance and warmth. Like the MMPI-II and MMPI-II-RF, the PAI can be used to support assignment of clinical diagnoses but can also be used to assess personality constructs within the general (nonclinical) population. The scales most useful for prediction of misconduct and violence are the Antisocial Features (ANT) scale, the Aggression (AGG) scale, and the Violence Potential Index (VPI). The PAI incorporates assessment of many of the individual predictors identified in this review of the academic research literature, including alcohol use, behavioral history of misconduct or violence, psychiatric history, dishonesty, disinhibition, hostility/anger/aggression, impulsivity, narcissism, neuroticism, and psychopathy.

The PAI is widely used within forensic settings to predict recidivism and violence. The ANT scale and the AGG scale, as well as the VPI, have been linked to increased disciplinary infractions among inmates (Reidy, Sorensen, & Davidson, 2016) as well as elevated risk of violence in institutional settings (Douglas, Hart, & Kropp, 2001). Reidy et al. (2016) found moderate predictive validity of these scales in predicting institutional misconduct. In this study, the PAI also demonstrated incremental validity¹⁶ by adding explanatory power to base models predicting disciplinary infractions, which included age, gender, prior violence, and type of offense leading to conviction.

The PAI has been well researched and widely used with non-clinical community samples (i.e., not incarcerated or hospitalized) as well. The PAI scales have demonstrated good internal consistency and good test-retest reliability (alphas in the .80s) within a variety of nonclinical settings (Morey, 1991). The PAI ANT scale evidences good convergent and discriminant validity within community samples for both men and women (Edens, Hart, Johnson, Johnson, & Olver, 2000; Salekin et al., 1998; Salekin, Trobst, & Krioukova, 2001). The ANT scale has been demonstrated to be a reliable measure of psychopathy (Morey, 1991; Salekin, Rogers, & Sewell, 1997), with alphas ranging from .84 to .86 and high test-retest reliability (Morey, 1991). A recent meta-analytic study provided support for the predictive validity of both the ANT and AGG scales to predict misconduct, recidivism, and violence (Gardner et al., 2015). In these meta-analyses, scores on the ANT scale (Cohen's d : .26 to .39) and AGG scales (Cohen's d : .23 to .40) indicated a small to moderate predictive utility.

The Personnel Selection Inventory (PSI)

The PSI (London House, 1975) is a group of psychological assessments designed to assess job applicants in a wide number of areas such as honesty and risk avoidance. The PSI is an overt integrity test on which respondents self-report past behavior as well as attitudes and opinions. Items are presented in a variety of formats, including rating scales, open-ended questions, and checklists. Versions of the PSI contain between 3 and 10 scales. Those most relevant to this review include the Honesty scale (assesses likelihood of engaging in workplace theft), Nonviolence scale (assesses proneness to violent behavior), Drug Avoidance scale (assesses likelihood that the applicant will use or sell illegal drugs on the job), Risk Avoidance scale (assesses likelihood of engaging in high-risk, dangerous, and thrill-seeking behavior), Responsibility scale (assesses likelihood of engaging in counterproductive, careless, or irresponsible behavior in the workplace), and Emotional Stability scale (assesses likelihood that emotional problems will disrupt work performance or safety practices). The PSI also contains two validity scales—the Validity/Candidness scale, which measures minimizing or socially desirable responding, and the Validity/Accuracy scale, which measures inconsistent or random responding. Depending upon the version used, the PSI incorporates assessment of many of

¹⁶ Incremental validity describes whether a new psychometric assessment increases the predictive ability beyond that provided by an existing method of assessment.

the constructs identified in this review as predictive of misconduct, including dishonesty, disinhibition, hostility/anger/aggression, impulsivity, and neuroticism.

The PSI has been extensively researched in employment settings, although the majority of research has focused on the Honesty scale. An early factor analysis of the PSI within a group of 849 applicants for retail sales jobs found that the PSI taps an underlying latent construct of dishonesty (Harris & Sackett, 1987), leading the authors to conclude that the PSI is a preemployment honesty test. More recent studies (Neuman & Baydoun, 1998) have included additional PSI scales in their examination and have concluded that the PSI is a measure of integrity. The PSI has demonstrated good convergent validity and has demonstrated strong correlations between the honesty scale and honesty as detected by polygraph comparison studies (Terris, 1985; Terris & Jones, 1982). The PSI has also demonstrated significant predictive validity using both self-report and external criteria. Within studies of job applicants, the PSI has been shown to predict stealing (Neuman & Baydoun, 1998), absence and tardiness (Jones & Terris, 1983), and termination for dishonesty and absenteeism (Brown & Joy, 1985). Retailers that have adopted the PSI for screening all applicants have reported tremendous success. A study that examined the impact of instituting the PSI within a major North American home improvement chain found that, when the company limited hiring for 2 years to only those who passed the PSI, they experienced a 50% reduction in employee terminations for theft, violence, and illegal drug use over the next 5 years and reduced shrinkage losses by more than \$2 million over a 2-year period (Brown, Jones, Terris, & Steffy, 1987). Interestingly, a meta-analysis of PSI studies found that the predictive validity of the instrument is higher when respondents are told that the investigator has another source of information regarding theft that can be compared to their responses even if this is not the case (McDaniel & Jones, 1988).

CONCLUSION

This review of academic research literature reveals a vast body of work on predictors of misconduct, violence, and other organizationally problematic behavior to include 17 identified biographical data and individual-level predictors. The most well-established predictor is behavioral history of misconduct and violence although simultaneous assessment of other predictors adds incremental predictive validity above and beyond an assessment of past behavior alone. Multifaceted assessment instruments that assess multiple constructs simultaneously are more effective in predicting misconduct than are single-construct assessments. Although this review did not reveal any existing assessment that evaluates all 17 of the identified predictors, it would be possible to create and validate such an instrument for use in screening and selection of military personnel. Findings of this literature review also suggest the importance of including reliability and validity indices in any such assessment to verify that the respondent is answering in a consistent and straightforward manner and the assessment shows a strong relationship with outcomes of misconduct.

This review of the academic research literature on predictors of misconduct and other organizationally problematic behavior provides a starting point for consideration of assessment tools that can be used to evaluate military compatibility. The next research summary will examine current and historical assessment practices used within DoD to evaluate the military compatibility of applicants for military service, including both enlisted personnel and Officers.

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