ANNUAL REVIEWS

Annual Review of Clinical Psychology

The MMPI-2-Restructured Form (MMPI-2-RF): Assessment of Personality and Psychopathology in the Twenty-First Century

Martin Sellbom

Department of Psychology, University of Otago, Dunedin 9054, New Zealand;
email: msellbom@psy.otago.ac.nz

ANNUAL REVIEWS CONNECT

www.annualreviews.org

- Download figures
- Navigate cited references
- Keyword search
- Explore related articles
- Share via email or social media

Abstract

This article describes the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) and situates the instrument in contemporary psychopathology and personality literature. The historical evolution of the MMPI instruments is highlighted, including how failure to update the test for several decades resulted in increasing disinterest by basic researchers and how the restructuring efforts beginning in the 2000s promised to realign the instrument with basic research. In this regard, the construct validity associated with MMPI-2-RF scores in the context of contemporary dimensional models of psychopathology is considered. Research supporting the applied utility of the MMPI-2-RF scales in a variety of contexts—including mental health screenings, presurgical evaluations, forensic assessment, and public safety screening—is also reviewed. Critiques of the MMPI-2-RF are described and addressed. Finally, a series of recommendations for future updates of the MMPI-2-RF are described along with a path toward the MMPI-3.

Contents

INTRODUCTION

Personality (or more accurately, psychopathology) assessment has been an integral part of clinical psychology practice spanning a full century (e.g., Butcher 2010). And for the past eight decades, the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley 1943) has been in the forefront, in terms of both scientific inquiry and applied clinical use. Unfortunately, for reasons that will be described in detail, the MMPI eventually fell into disfavor among basic psychopathology researchers owing to the lack of theoretical advancements, but developments during the past 15 years and publication of the MMPI-2-Restructured Form (MMPI-2-RF; Ben-Porath & Tellegen 2008) in 2008 have begun to realign this instrument with contemporary psychopathology developments. This article describes the MMPI-2-RF in detail, discusses the historical evolution of the MMPI instruments, highlights both achievements in construct validity and applied assessment research, discusses (and addresses) some criticisms of the test, and finally, recommends a path forward.

OVERVIEW OF THE MMPI-2-RF

The MMPI-2-RF is a 338-item (true/false), multiscale, self-report inventory that measures a wide range of psychopathology symptoms and maladaptive personality traits. The instrument was developed by Professors Yossef Ben-Porath and Auke Tellegen as a psychometrically improved and more efficient alternative to the MMPI-2. The MMPI-2-RF items are a subset of the 567 MMPI-2 item pool, and as a result, continued reliance on the MMPI-2 normative data has been possible. In

the 10 years that have passed since the MMPI-2-RF was released, it has become a frequently used and highly recommended test across a number of settings, including (but not limited to) mental health, medical, forensic, and prison, as well as for public safety personnel (see Ben-Porath 2012; Corey & Ben-Porath 2018; Sellbom & Wygant 2018).

The 338 MMPI-2-RF items aggregate onto 51 individual scales. Nine of these, the Validity Scales, measure various forms of response styles that, when excessive, could invalidate a test protocol. The remaining 42 scales measure substantive clinical content. Most of these scales are organized into a hierarchy that reflects both content breadth and interpretive organization. More specifically, this hierarchy of scales includes the three Higher-Order (H-O) Scales on the first tier, the nine Restructured Clinical (RC) Scales at the mid-tier level, and the 23 Specific Problems (SP) Scales at the bottom. Parallel to this hierarchy are the Personality Psychopathology Five (PSY-5) Scales, Revised, which are dimensional measures of personality pathology, and the two Interest Scales. **Table 1** lists the 51 MMPI-2-RF scales and provides a brief description of each. Readers are referred to Ben-Porath (2012) for a more detailed discussion of the underlying psychological constructs assessed by these scales.

The nine Validity Scales measure various forms of response bias that can broadly be divided into three domains: non-content-based responding, overreporting, and underreporting (see, e.g., Ben-Porath 2013 for a thorough description of these concepts). Non-content-based response bias refers to unintentional or intentional responding that manifests as unscorable; random, inconsistent, or careless; or indiscriminant fixed (acquiescent or counteracquiescent) responding. The overreporting scales measure intentional or unintentional exaggeration or fabrication of psychopathology symptoms, as well as noncredible somatic and cognitive responding. The two underreporting scales assess overly virtuous responding (or positive impression management) and an exaggeration of psychological adjustment and resilience.

The three H-O Scales, Emotional/Internalizing Dysfunction (EID), Thought Dysfunction (THD), and Behavioral/Externalizing Dysfunction (BXD), index broadband psychopathology constructs of, respectively, internalizing, thought disorder, and externalizing. They map onto broader level dimensions that have been identified in a wide range of psychopathology research (see, e.g., Kotov et al. 2017). At the top of the MMPI-2-RF interpretive hierarchy, they reflect general and pervasive dysfunction in their respective areas.

The nine RC Scales are identical to their MMPI-2 counterparts (Tellegen et al. 2003). Unlike the original MMPI Clinical Scales, the RC Scales reflect transdiagnostic, dimensional psychological constructs rather than psychiatric syndromes. The 23 SP Scales, the most narrowband symptom and trait measures on the instrument, are organized into four thematic domains: Somatic/Cognitive, Internalizing, Externalizing, and Interpersonal, which also reflect the general interpretive organization of the instrument. The two Interest Scales [Aesthetic–Literary (AES) and Mechanical–Physical (MEC)] primarily measure personality and attitudinal constructs rather than clinical symptoms or traits.

Finally, the five PSY-5 Scales are revised versions of their MMPI-2 counterparts. They operationalize the PSY-5 constructs originally articulated by Harkness & McNulty (1994). More specifically, they represent dimensional personality traits with an abnormal range and are presented as a dimensional alternative to the categorical personality disorder framework that has dominated the *Diagnostic and Statistical Manual of Mental Disorders* (DSM). The PSY-5 constructs and associated MMPI-2-RF scales align well with the trait domains included in the Alternative Model for Personality Disorders (AMPD; Am. Psychiatr. Assoc. 2013) in Section III of the DSM-5 (Anderson et al. 2013, 2015a); for a more detailed analysis of this overlap, see the section Mapping the MMPI-2-RF onto Contemporary Psychopathology and Personality Models.

Table 1 Minnesota Multiphasic Personality Inventory-2-Restructured Form scales, abbreviations, and brief descriptions

Scale	Abbreviation	General description
Validity Scales		
Variable Response Inconsistency	VRIN-r	Inconsistent responding
True Response Inconsistency	TRIN-r	Indiscriminant fixed responding
Infrequent Responses	F-r	Overreporting validity scale based on rare responses in the general population
Infrequent Psychopathology Responses	Fp-r	Overreporting validity scale based on rare responses in general and psychiatric populations
Infrequent Somatic Responses	Fs	Overreporting validity scale based on rare somatic complaints in general and medical patient populations
Symptom Validity	FBS-r	Overreporting validity scale based on noncredible somatic and cognitive complaints
Response Bias	RBS	Overreporting validity scale associated with failure on performance validity tests
Uncommon Virtues	L-r	Underreporting validity scale based on rarely claimed moral attributes or activities
Adjustment Validity	K-r	Underreporting validity scale describing an avowal of good psychological adjustment
Higher-Order Scales		
Emotional/Internalizing Dysfunction	EID	Pervasive problems associated with mood and affect
Thought Dysfunction	THD	Pervasive problems with disordered thinking
Behavioral/Externalizing Dysfunction	BXD	Pervasive problems with undercontrolled or acting-out behavior
Restructured Clinical Scales		
Demoralization	RCd	General emotional distress, unhappiness, and dissatisfaction
Somatic Complaints	RC1	Preoccupation with various types of health complaints
Low Positive Emotions	RC2	Attenuated positive emotional experiences, significant anhedonia, disengagement
Cynicism	RC3	Non-self-referential beliefs expressing a generally low opinion and mistrust of others
Antisocial Behavior	RC4	Antisocial proclivities, impulsivity, recklessness, and irresponsible behavior
Ideas of Persecution	RC6	Self-referential beliefs that others pose a threat, persecutory delusions
Dysfunctional Negative Emotions	RC7	Dysfunctional anxiety, anger, irritability, fear, guilt
Aberrant Experiences	RC8	Unusual thoughts or perceptions, dissociation
Hypomanic Activation	RC9	Excessive activation, drive, aggression, and grandiosity
Specific Problems Scales		
Malaise	MLS	Overall feeling of physical debilitation and poor health
Gastrointestinal Complaints	GIC	Complaints about nausea, recurring irritable stomach, and deficient appetite
Head Pain Complaints	HPC	Complaints about head and neck pains
Neurological Complaints	NUC	Complaints about faintness, weakness, bodily sensations, loss of balance, etc.
Cognitive Complaints	COG	Complaints about memory and difficulties concentrating

(Continued)

Table 1 (*Continued*)

Scale	Abbreviation	General description
Suicidal/Death Ideation	SUI	Suicidal ideation and reports of suicide attempts; preoccupation with death
Helplessness/Hopelessness	HLP	Belief that problems cannot be solved or goals be reached
Self-Doubt	SFD	Lacking in confidence; having feelings of worthlessness
Inefficacy	NFC	Perception that one is inefficacious; indecisiveness
Stress/Worry	STW	Poor stress tolerance, preoccupation with setbacks, difficulty with time pressure
Anxiety	AXY	Intense anxiety, frights, frequent nightmares
Anger Proneness	ANP	Poor anger control, frustration intolerance, impatience with others
Behavior-Restricting Fears	BRF	Fears that considerably inhibit everyday activities
Multiple Specific Fears	MSF	Fears of various stimuli, such as blood, fire, thunder
Juvenile Conduct Problems	JCP	Significant problems at school and at home; stealing as a youth
Substance Abuse	SUB	Abuse of alcohol and/or drugs, currently and/or in the past
Aggression	AGG	Aggressive behavior of both a physical and verbal nature
Activation	ACT	Increased excitation and energy level, euphoria, racing thoughts
Family Problems	FML	Problematic family relationships, familial alienation
Interpersonal Passivity	IPP	Unassertive and submissive with others
Social Avoidance	SAV	Eschewing or not deriving pleasure from social events
Shyness	SHY	Prone to feel inhibited and anxious around others, bashful
Disaffiliativeness	DSF	Misanthropic attitudes about people, disliking being around others
Interest Scales		
Aesthetic–Literary Interests	AES	Interests in music, literature, the theater, nursing
Mechanical–Physical Interests	MEC	Interests in building things, the outdoors, sports
Personality Psychopathology Five Scales, Revised		
Aggressiveness-Revised	AGGR-r	Proactive, goal-directed aggression; assertiveness; grandiosity
Psychoticism-Revised	PSYC-r	Proclivities towards poor reality testing
Disconstraint-Revised	DISC-r	Disinhibited behavior, impulsivity, sensation-seeking, risk-taking
Negative Emotionality/Neuroticism-Revised	NEGE-r	Temperamental proclivity for anxiety, insecurity, worry, anger, and fear
Introversion/Low Positive Emotionality-Revised	INTR-r	Temperamental proclivity for anhedonia and social disengagement

HISTORY AND EVOLUTION OF THE MMPI INSTRUMENTS

The development of the MMPI can be traced back to the 1930s, a time when many scholars and practitioners were skeptical of self-report inventories, owing to the face validity of items and, thus, their susceptibility to response bias (e.g., Ellis 1946). Hathaway & McKinley (1940) recognized this problem when they undertook the development of a new self-report inventory to aid in differential diagnosis. The product, which was first called the Multiphasic Personality Schedule and later became formally known as the MMPI, was heavily rooted in the psychopathology literature of the time. The candidate item pool they developed was guided by Kraeplin's (1921) descriptive nosology (Ben-Porath 2012). Scale construction was purely empirical, guided by methods that had previously been employed in developing the Vocational Interest Blank (Strong 1938). The underlying idea was that an empirical approach that did not consider the actual content of items would generate scales that were less susceptible to response distortion as well as provide

optimal group differentiation beyond what clinical judgment could offer. More specifically, Hathaway and McKinley identified eight of the most common mental disorders and used an empirical keying method to select items that would differentiate a particular diagnostic group from a healthy comparison group. The items that statistically differentiated a particular disorder group from the controls were placed on a scale representing the targeted diagnosis (Hathaway & McKinley 1940). This procedure yielded the eight original MMPI Clinical Scales.[1]

An Early Paradigm Shift

By the mid-1940s, it had become clear that the Clinical Scales did not work as originally intended. The concept of elevation in one scale reflecting a specific diagnosis was not fulfilled, as, frequently, patients with psychopathology would have elevated scores on multiple scales. Although comorbidity could likely account for some of the multiple elevations, it was also clear that a substantial number of elevations would lead to false-positive diagnoses if the scales were to be used as originally intended. Rather than abandoning the instrument, scholars led by Paul Meehl, Hathaway's graduate student at the time the MMPI was constructed, began to examine various profile configurations (combinations of elevated scales), which were eventually labeled code types. By the mid-1950s, Meehl (1956) had called upon researchers and clinicians to generate as much empirical information as possible about code types to facilitate their interpretation, and the MMPI had become the most frequently researched and one of the most used tests in clinical practice (e.g., Lubin et al. 1971). At this time, the MMPI flourished in two important and mutually beneficial ways (Ben-Porath 2012). Academics used the instrument to operationalize and study various issues relevant to psychopathology and personality, relying on the wealth of clinical data available, whereas test users were able to rely on a considerable empirical literature when interpreting MMPI findings (Ben-Porath 2012). Over time, however, basic researchers found the test's impracticality (length) and the code-type approach's disconnection to theoretical developments increasingly dissatisfactory and turned to alternative approaches. This development had the unfortunate consequences of MMPI users no longer benefitting from newer developments in psychopathology research and investigators losing access to data generated by the most widely used measure of psychopathology (Ben-Porath 2012).

By the mid-1970s, the criticisms of the MMPI became more prominent, and even Hathaway himself expressed concerns and frustration that the original Clinical Scales had never been updated (Hathaway 1960, 1972). Indeed, he went as far as to indicate that if nothing was done soon, the MMPI "might have changed from a hopeful innovation to an aged obstacle" (Hathaway 1972, p. xiv), although he made clear that the field at that time still lacked a viable alternative. Others, including Norman (1972) and Loevinger (1972), were quite critical of the empirical keying method used to develop the Clinical Scales, and they criticized the reliance on Kraeplinian constructs. Even Meehl (1972) conceded that the purely empirical approach that he had advocated in 1945, which virtually ignored any content-based interpretation, was likely insufficient for contemporary scale development.

The test publisher eventually made the decision to restandardize the MMPI and introduce the MMPI-2 (Butcher et al. 1989), owing to significant concerns about the original normative sample, which consisted mainly of low-education-level, white, Minnesota farmers, laborers, and their spouses, many of whom were recruited in the early 1940s as visitors of patients at the University of Minnesota hospital. A large, nationally representative normative sample was collected in the

---

[1]Two additional scales representing Masculinity/Femininity and Social Introversion were developed and added at a later stage, making the total 10 Clinical Scales by the late 1940s.

1980s. Although numerous changes had been made to the item pool, allowing for the development of a new set of Content Scales, the original Clinical Scales were retained essentially unchanged to preserve their research base and clinical familiarity (Ben-Porath 2012). In addition to the Content Scales, which were rationally developed with statistical refinements and captured constructs beyond what the Clinical Scales assessed, new validity scales were developed. However, dissatisfaction remained with the continued reliance on the Clinical Scales (e.g., Helmes & Reddon 1993), and thus the disconnect from academic psychopathology research was likely complete.

A Second MMPI Paradigm Shift

The introduction of the RC Scales (Tellegen et al. 2003) for the MMPI-2 represented the most substantial MMPI development since the original construction of the inventory. The original Clinical Scales were hampered by major psychometric problems, owing to excessive intercorrelations, item overlap, insufficient resources for proper cross-validation, and the inclusion of so-called subtle items that Hathaway and McKinley thought would be immune to response distortion, but more likely were the result of their scale construction strategy (see Ben-Porath 2012 for details). Tellegen et al. (2003) identified demoralization as a major contributing factor to the extensive Clinical Scale intercorrelations and, thus, partly responsible for their poor discriminant validity. Demoralization was conceptualized according to Tellegen's theory of self-reported affect (e.g., Watson & Tellegen 1985) as a combination of low positive and high negative affect, which they initially labeled a happiness–unhappiness dimension. Tellegen (1985) indicated that this dimension saturates many self-report measures, including the MMPI. The RC Scales were developed by identifying and removing the demoralization variance and focusing on major, distinct core constructs that remained in the item pool of each of the original Clinical Scales. The results were consistent with the developers' goals, with the RC Scales showing substantially improved internal consistency and reliability, comparable to improved convergent validity, and substantially better discriminant validity relative to their Clinical Scale counterparts across multiple studies (see Tellegen et al. 2009 for a review). Some critics questioned the validity and utility of the RC Scale efforts (e.g., Butcher 2010, Caldwell 2006, Nichols 2006), while others welcomed the effort and anticipated its success (e.g., Finn & Kamphuis 2006, Simms 2006, Weed 2006).

The development of RC Scales for the MMPI-2 provided the groundwork for the development of a new version of the MMPI, the MMPI-2-RF. The primary rationale for the most substantial revision since the test's inception was that while the MMPI-2 item pool included rich clinical content, its aggregate scales were inefficient, and they were outdated with respect to contemporary psychometric principles. The Clinical Scales' emphasis on categorical diagnostic syndromes was also at odds with developments in the science of contemporary psychopathology. Therefore, the goal of the restructuring process was to capture the substantial clinical information accessible with the MMPI-2 item pool by using more psychometrically sound, up-to-date, and efficient scales that also mapped onto the contemporary literature on psychopathology and personality (Tellegen & Ben-Porath 2008). This process started with the restructuring of the Clinical Scales and then the development of additional distinct and demoralization-free (to the degree conceptually feasible) scales to augment the RC Scales in capturing a full range of clinical phenomena.

The MMPI-2 normative sample was retained with one modification. Nongendered norms were used instead of the traditional gender-based norms. Nongendered norms were first introduced in the MMPI-2 (Ben-Porath & Forbey 2003) to accommodate the use of the test in employment-related assessments for which gender-based norms are prohibited by the Americans with Disabilities Act of 1990 (Pub. L. No. 101-336, §2, 104 Stat. 328). A comparison of the gendered and nongendered norms revealed few meaningful differences in standardized scores

Table 2 Timeline of major milestones in the development of the Minnesota Multiphasic Personality Inventory (This timeline includes only the versions of the MMPI aimed at adults)

Milestone	Authors	Publication year
Minnesota Multiphasic Personality Inventory (MMPI)	S.R. Hathaway & J.C. McKinley	1943
Minnesota Multiphasic Personality Inventory-2 (MMPI-2)	J.N. Butcher, W.G. Dahlstrom, J.R. Graham, A. Tellegen & B. Kaemmer	1989
MMPI-2-Restructured Clinical Scales	A. Tellegen, Y.S. Ben-Porath, J.L. McNulty, P.A. Arbisi, J.R. Graham & B. Kaemmer	2003
MMPI-2-Restructured Form (MMPI-2-RF)	Y.S. Ben-Porath & A. Tellegen	2008
Minnesota Multiphasic Personality Inventory-3 (MMPI-3)	Y.S. Ben-Porath & A. Tellegen	2020 (projected)

(Ben-Porath & Forbey 2003), leading Ben-Porath & Tellegen (2008) to develop only nongendered norms for use with the MMPI-2-RF.

Table 2 summarizes the timeline of the major milestones discussed throughout this section, as well as listing the anticipated release of the MMPI-3 (see the Conclusions and Future Directions section for more detail).

CONSTRUCT VALIDITY OF MMPI-2-RF SCALE SCORES

Approximately 10 years after its publication, the MMPI-2-RF has amassed a rather extensive literature, some of which started with the publication of the RC Scales in 2003.[2] At the time of this writing, more than 400 publications (the great majority in peer-reviewed journals) have examined or focused on MMPI-2-RF scales. Major contributions to particular areas of construct validity are reviewed and discussed in this section, whereas a subsequent section, Applied Personality Assessment with the MMPI-2-RF, considers the voluminous literature that directly informs the applied use of the instrument in several important areas of clinical assessment.

Assessment of Response Bias

One of the domains that sets well-established, omnibus clinical assessment instruments apart from those less frequently used in practice is their utility in assessing response bias. There are a number of clinical settings and contexts (e.g., medicolegal, preemployment) in which test takers may have a substantial incentive to misrepresent their standing on the clinical constructs of interest. In addition, individuals completing a self-report inventory are sometimes uncooperative or they may be unable to provide accurate responses to test items, resulting in careless or inconsistent responding. Because the clinical utility of self-report inventories can be substantially affected by response bias, its accurate identification is of high clinical import.

McGrath et al. (2010) claimed, based on a meta-analysis they conducted, that response bias measurement was of limited utility, as validity scales did not moderate substantive scales' associations with external criteria. However, as detailed by Morey (2012) and Rohling et al. (2011), this conclusion was ill-founded. Central to their utility is the question of whether validity scales are able to identify known response bias and differentiate it from genuine responding. Moreover, an abundance of research has demonstrated that response bias can and does influence both the clinical utility and psychometric validity of substantive scale scores (e.g., Burchett & Ben-Porath 2010, Wiggins et al. 2012).

---

[2]Because the MMPI-2 RC Scales are identical to their MMPI-2-RF counterparts, which was intentional for transitional purposes, all research published on the MMPI-2 versions applies to the MMPI-2-RF as well.

Several recent studies illustrate the need for validity indicators in important ways. Burchett & Ben-Porath (2010) examined 312 university students who completed a series of self-report questionnaires under standard instructions and were then randomly assigned to complete the MMPI-2-RF under overreporting psychopathology, overreporting physical problems, or standard responding conditions. The authors found that overreporters' mean MMPI-2-RF scores were substantially elevated relative to those of standard instruction participants and that the psychometric validity of these scores was seriously compromised, as reflected by attenuated correlations with conceptually relevant criterion measures in the two overreporting conditions. Wiggins et al. (2012) replicated these findings using a naturalistic design in which they used the MMPI-2-RF Validity Scales to identify overreporters versus genuine responders in a large sample ($n = 2,275$) of disability claimants. Here, too, the authors found that scores on the substantive MMPI-2-RF scales exhibited substantially attenuated correlations with extra test measures in the overreporting condition relative to those deemed to be genuine responders. Forbey et al. (2013) replicated these findings using an underreporting condition. Overall, these results indicate that MMPI-2-RF scores are substantially altered and their psychometric validity is attenuated in the context of over- and underreporting response styles.

At the time of this writing, more than 70 peer-reviewed articles have examined at least one of the MMPI-2-RF Validity Scales. Two meta-analyses have been specifically devoted to the assessment of overreporting (Ingram & Ternes 2016, Sharf et al. 2017). Ingram & Ternes (2016) reviewed 25 studies of the MMPI-2-RF overreporting indicators, covering a wide range of samples and research designs. These scholars reported that effect size estimates (Hedges' g) ranged from 1.08 (Symptom Validity; FBS-r) to 1.43 (Infrequent Psychopathology Responses; Fp-r) across all samples and designs. Most recently, Sharf et al. (2017) examined 30 studies that met their stringent criteria for validity scale research. Similar to Ingram & Ternes (2016), they reported that effect size estimates (Cohen's d) ranged from 0.75 (FBS-r) to 1.35 (Fp-r) when genuine patients were used as the comparison group.

In terms of research about underreporting, several studies have also supported the validity and utility of the Uncommon Virtues (L-r) and Adjustment Validity (K-r) Scales. Sellbom & Bagby (2008) conducted an analog simulation design in which they had both university students and patients with schizophrenia complete the MMPI-2 (from which MMPI-2-RF scores were obtained) with instructions to underreport, and they compared these groups to patients and students who completed the test under standard instructions. Both L-r and K-r differentiated between the underreporting and standard instruction groups at large effect sizes. Crighton et al. (2017) replicated these findings in a different university sample and also indicated good classification accuracy statistics for L-r and K-r in differentiating underreporting and standard instruction groups. Detrick & Chibnall (2014) used a differential prevalence design in which they compared MMPI-2-RF scores from a preemployment sample (of people who were motivated to be hired as police officers) with scores generated by the same individuals after they had successfully completed their training and thus had no stake in the results of the second assessment (i.e., had less motivation to underreport). The authors observed L-r and K-r differences between the two test administrations with large effect sizes, which was consistent with conceptual expectations. Overall, this research supports the L-r and K-r Scales as being effective in identifying underreporting and also working as well as their MMPI-2 counterparts (see Baer & Miller 2002 for a meta-analysis).

Mapping the MMPI-2-RF onto Contemporary Psychopathology and Personality Models

One of the goals in developing the MMPI-2-RF was to better link the instrument's scales to contemporary models and frameworks of psychopathology and personality. The original MMPI and

MMPI-2 Clinical Scales were designed to assess psychiatric syndromes but, for reasons discussed earlier, did so with inadequate utility. The MMPI-2-RF scales measure psychological constructs (Lee et al. 2017, Sellbom & Arbisi 2017) and, more specifically, clinical symptom and maladaptive personality trait constructs that are transdiagnostic in nature, reflecting current thinking and scholarship in psychopathology science (e.g., Insel et al. 2010, Kotov et al. 2017, Krueger & Markon 2014). The following sections focus specifically on MMPI-2-RF substantive scales in the context of the Hierarchical Taxonomy of Psychopathology (HiTOP; Kotov et al. 2017) and the DSM-5 AMPD (Am. Psychiatr. Assoc. 2013; see, e.g., Krueger & Markon 2014, Skodol 2012).

Hierarchical taxonomy of psychopathology. The HiTOP model represents a recent effort at organizing psychopathology and maladaptive personality symptoms and traits in a manner that is consistent with psychiatric and psychological science (e.g., Haslam et al. 2012) rather than into distinct and often arbitrary categories. The HiTOP model postulates six broad spectra of psychopathology (somatoform, internalizing, thought disorder, disinhibited externalizing, antagonistic externalizing, and detachment) that have underlying subfactors (e.g., distress or fear for the internalizing spectrum) at the lower-order level and individual disorder symptoms (e.g., depression under distress; panic disorder under fear) at the observed syndromal level. HiTOP represents an effort to develop a comprehensive reorganization of psychopathology, which at this point is best viewed as an important work in progress.

A review of the MMPI-2-RF literature indicates that its substantive scale scores align quite well with elements of the HiTOP structure. Although it would be intuitively expected that the H-O Scales would map onto three of the HiTOP spectra,[3] it is noteworthy that these scales were developed based on factor analysis of the nine RC Scales (Tellegen & Ben-Porath 2008; see also Sellbom et al. 2008b)—rather than being rationally developed—in studies using samples from North America and later replicated in Europe. For instance, Hoelzle & Meyer (2008) and Sellbom et al. (2008b) independently reported almost identical findings in large psychiatric samples from, respectively, the USA and Canada. Van der Heijden and colleagues (2013) replicated Sellbom et al.'s (2008b) findings across five large Dutch clinical and forensic samples, again finding that the RC Scales adhered to a three-factor structure. Thus, analyses using a completely independent set of MMPI-2-RF indicators (from, e.g., DSM diagnoses) revealed the same broad structure of psychopathology as observed in the extant literature.

McNulty & Overstreet (2014) observed that when corrected for item overlap, the 42 substantive MMPI-2-RF scales were best fitted according to a six-factor model using exploratory factor analysis across two independent and large clinical outpatient and inpatient samples (separated by men and women). Across all four groups, the factors were identical: somatoform, aggressiveness (akin to antagonism), psychoticism, disconstraint, negative emotionality, and introversion (i.e., detachment). Moreover, Anderson et al. (2015a) conducted a conjoint exploratory factor analysis using MMPI-2-RF scale sets with the Personality Inventory for DSM-5 (PID-5; Krueger et al. 2012) in a large Canadian psychiatric sample. These authors found that the three higher-order domains could be extracted in analyses using each of the four MMPI-2-RF scale sets in conceptually expected ways. It is noteworthy that in these latter results that used the lower order scale sets, a fourth factor representing social detachment, introversion, and low affective arousal consistently emerged. Most recently, Sellbom (2017a) examined the latent structure of the 23 SP Scales and two Interest Scales in large outpatient mental health and correctional samples and found support for somatization, negative affectivity (internalizing), externalizing, and detachment factors.

---

[3]Kotov et al. (2017) indicated that the disinhibited–externalizing and antagonistic–externalizing spectra underlie an externalizing super-spectrum; in this vein, the MMPI-2-RF H-O Scales cover four of the six HiTOP spectra.

Notably, the SP Scales do not have any thought disorder markers, and when Sellbom (2017a) included Ideas of Persecution (RC6) and Aberrant Experiences (RC8) in the model, a five-factor structure with a thought dysfunction factor emerged. Overall, these various studies support the notion that the 42 MMPI-2-RF scales, at various levels, capture the six broad spectra articulated within HiTOP.

In terms of the HiTOP syndromal level, there is also considerable overlap between MMPI-2-RF scales and these dimensional constructs. Research has indicated that internalizing bifurcates into distress and fear disorders (e.g., Watson 2005). Sellbom et al. (2008a) showed in both clinical and nonclinical samples that the RC Scales [Demoralization (RCd), Low Positive Emotions (RC2), and Dysfunctional Negative Emotions (RC7), specifically] could account for a substantial proportion of variance in latent factors representing distress and fear disorders. More specifically, RCd was the main predictor of distress disorders and RC7 of fear disorders, whereas RC2 uniquely predicted depression (as opposed to other distress disorders) and social anxiety disorder symptoms (as opposed to other fear disorders). Shkalim et al. (2017) recently replicated these findings in an Israeli clinical sample. The MMPI-2-RF SP Scales further break down various symptoms associated with both distress [e.g., Suicidal/Death Ideation (SUI), Helplessness/Hopelessness (HLP), Self-Doubt (SFD), Inefficacy (NFC), Stress/Worry (STW)] and fear [e.g., Anxiety (AXY), Behavior-Restricting Fears (BRF), Multiple Specific Fears (MSF), Shyness (SHY)] based on more specific symptom correlates (Tellegen & Ben-Porath 2008).

In terms of the externalizing spectrum, recent research has also demonstrated that the items that make up the MMPI-2-RF externalizing SP Scales [Juvenile Conduct Problems (JCP), Substance Abuse (SUB), and Aggression (AGG)] can be modeled to map onto a contemporary structure, such as Krueger et al.'s (2007) elaborated externalizing spectrum model (Sellbom 2016). Specifically, Sellbom (2016) tested several competing structural models in large correctional, forensic, and community samples, and found the best support for Krueger et al.'s (2007) model, which was also generally invariant across setting, gender, and race. In the forensic sample, Sellbom (2016) also observed that latent factors representing general externalizing, callous aggression, and substance misuse predicted external forensic outcomes in a manner that was consistent with conceptual expectations.

To summarize, quantitative hierarchical research using the MMPI-2-RF scales indicates that the test's hierarchical organization conforms to the same structure as identified in the extant psychopathology epidemiology literature as represented by the HiTOP model. All six proposed spectra can be accounted for within the instrument, along with many subfactors and syndromal-level constructs as well. **Figure 1** shows a proposed mapping of MMPI-2-RF scales onto HiTOP in light of the research just reviewed. Overall, this overlap bodes well not only for a research operationalization of HiTOP but also for clinical application and measurement, as the MMPI-2-RF allows for the translation of HiTOP research into clinical practice with a widely used instrument.

Alternative model for personality disorders. The AMPD (Am. Psychiatr. Assoc. 2013) represents a contemporary psychopathology development specifically intended for the operationalization of personality disorder diagnosis. It is listed in Section III (Emerging Models and Measures) of the DSM-5 as a model for further research. A similar model is slated for inclusion in the *International Statistical Classification of Diseases and Related Health Problem*s, 11th Revision (e.g., Reed 2018, WHO 2018). More specifically, the AMPD operationalizes personality psychopathology based on impairment in personality functioning (Criterion A) and a dimensional personality trait model (Criterion B) as the core features (Am. Psychiatr. Assoc. 2013). Impairment is assessed according to a Level of Personality Functioning Scale (Am. Psychiatr. Assoc. 2013) and encompasses identity, self-direction, empathy, and intimacy deficits, which are manifested in different

HiTOP superspectra										
MMPI-2-RF	**Higher-order dimensions** — EID, THD, BXD									
HiTOP spectra	Somatoform	Internalizing					Thought disorder	Disinhibited EXT	Antagonistic EXT	Detachment
MMPI-2-RF	RC1	EID, NEGE-r					THD, PSYC-r	BXD, DISC-r	BXD, AGGR-r	INTR-r
HiTOP subfactors		Sexual problems	Eating pathology	Fear	Distress	Mania		Substance abuse	Antisocial behavior		
MMPI-2-RF		None	None	RC7	RCd	RC9		RC4, SUB	RC4, JCP		
HiTOP syndromes/disorders	SSD, illness, anxiety	Low desire, arousal difficulty, sexual pain, orgasmic dysfunction	Bulimia nervosa, anorexia nervosa, binge eating disorder	Social phobia, agoraphobia, panic disorder, OCD, specific phobia	MDD, PDD, GAD, PTSD, borderline PD, paranoid PD	Bipolar disorder, cyclothymic disorder	Schizophrenia spectrum disorders, mood disorder with psychosis, schizotypal PD, paranoid PD	Substance use disorders	Antisocial PD, conduct disorder, ODD, ADHD, IED	Narcissistic, paranoid, borderline, histrionic PDs	Schizoid, avoidant, (low) histrionic PDs
MMPI-2-RF	MLS, GIC, HPC, NUC, COG	None	None	AXY, BRF, MSF, SHY	SUI, HLP, SFD, NFC, STW	ACT	RC6, RC8	SUB	JCP, ANP, AGG	RC3, RC6, FML, IPP(–), SHY(–), AGG	RC2, SAV, DSF

(–) Low scores on the scales are expected

Figure 1

Mapping the MMPI-2-RF scales onto the HiTOP structure. – indicates that low scores on the scales are expected. Abbreviations: ACT, Activation; ADHD, attention-deficit/hyperactivity disorder; AGG, Aggression; AGGR-r, Aggressiveness-Revised; ANP, Anger Proneness; AXY, Anxiety; BRF, Behavior-Restricting Fears; BXD, Behavioral/Externalizing Dysfunction; COG, Cognitive Complaints; DISC-r, Disconstraint-Revised; DSF, Disaffiliativeness; EID, Emotional/Internalizing Dysfunction; EXT, Externalizing; FML, Family Problems; GAD, generalized anxiety disorder; GIC, Gastrointestinal Complaints; HiTOP, Hierarchical Taxonomy of Psychopathology; HLP, Helplessness/Hopelessness; HPC, Head Pain Complaints; IED, intermittent explosive disorder; INTR-r, Introversion/Low Positive Emotionality-Revised; IPP, Interpersonal Passivity; JCP, Juvenile Conduct Problems; MDD, major depressive disorder; MLS, Malaise; MMPI-2-RF, Minnesota Multiphasic Personality Inventory-2-Restructured Form; MSF, Multiple Specific Fears; NEGE-r, Negative Emotionality/Neuroticism-Revised; NFC, Inefficacy; NUC, Neurological Complaints; OCD, obsessive-compulsive disorder; ODD, oppositional defiant disorder; PD, personality disorder; PDD, pervasive depressive disorder; PSYC-r, Psychoticism-Revised; PTSD, posttraumatic stress disorder; RCd, Demoralization; RC1, Somatic Complaints; RC2, Low Positive Emotions; RC3, Cynicism; RC4, Antisocial Behavior; RC6, Ideas of Persecution; RC7, Dysfunctional Negative Emotions; RC8, Aberrant Experiences; RC9, Hypomanic Activation; SAV, Social Avoidance; SFD, Self-Doubt; SHY, Shyness; SSD, somatic symptom disorder; STW, Stress/Worry; SUB, Substance Abuse; SUI, Suicidal/Death Ideation; THD, Thought Dysfunction. Figure adapted from Kotov et al. (2017).

ways depending on the pathology. The trait model consists of 25 trait facets that aggregate onto five higher-order domains (negative affectivity, detachment, antagonism, disinhibition, and psychoticism). Furthermore, six personality disorders (Antisocial, Avoidant, Borderline, Narcissistic, Obsessive–Compulsive, and Schizotypal) were retained and operationalized based on the presence of clinical elevations on a set of trait dimensions, as well as at least moderate severity in two of four impairment domains.

The MMPI-2-RF has been examined in relation to the AMPD in multiple studies, with promising results. This research has focused exclusively on the overlap with the AMPD trait model rather than the impairment criteria. First and foremost, the MMPI-2-RF PSY-5 Scales map directly onto the AMPD trait domains. Indeed, they are conceptual cognates, and an argument could be made that the DSM-5 Work Group for Personality and Personality Disorders found a model that replicated the PSY-5 (Harkness et al. 2012), which was originally published in 1994 (Harkness & McNulty 1994)—almost 20 years prior to the release of the DSM-5. This overlap was acknowledged in an early online version of the proposal (now removed) describing the AMPD, in which it was stated that, "at the domain-level, [it] bears a strong resemblance to Dr. Allan Harkness' Personality Psychopathology Five (PSY-5) model of clinically relevant personality variants" (Am. Psychiatr. Assoc. 2011). In two studies, Anderson et al. (2013, 2015a) examined undergraduate students and psychiatric patients, respectively, who had been administered the MMPI-2-RF and the PID-5, the most common operationalization of the AMPD trait model. Across both studies, the MMPI-2-RF PSY-5 and PID-5 domain scales converged as conceptually expected [e.g., Negative Affectivity with Negative Emotionality/Neuroticism-Revised (NEGE-r); Detachment with Introversion/Low Positive Emotionality-Revised (INTR-r)].

Research (Anderson et al. 2015a, Sellbom et al. 2013) has also demonstrated substantial overlap between the MMPI-2-RF scales and PID-5 trait facet scales in a manner that was consistent with conceptual expectations in samples of both psychiatric inpatients and university students. Sellbom et al. (2013) observed that conceptually relevant MMPI-2-RF scales could explain a substantial proportion of variance (47% to 60%) in trait aggregate scores representing Antisocial, Avoidant, Borderline, and Schizotypal personality disorders, with smaller (albeit still large) amounts of variance in Narcissistic and Obsessive–Compulsive personality disorders. Overall MMPI-2-RF substantive scale scores converged well with a measure of maladaptive personality traits (PID-5) in representing an oft-observed higher-order psychopathology structure (e.g., Kotov et al. 2017) as well as some factors more specific to the psychiatric patient sample examined.

In summary, a substantial body of research supports MMPI-2-RF scales converging with the DSM-5 AMPD traits in a theoretically expected manner. To be clear, there is no one-to-one correspondence at the trait facet level; however, MMPI-2-RF scores can capture most of the relevant variance in the DSM-5 AMPD traits and can generate interpretations that reflect the presence of personality pathology from this perspective. Further research is needed with other samples and using additional measures of AMPD traits and personality impairment (i.e., the Level of Personality Functioning Scale). It should also be noted that, at this point, the empirical evidence to support the clinical use of the MMPI-2-RF far exceeds that available for any HiTOP- or AMPD-specific operationalization.

APPLIED PERSONALITY ASSESSMENT WITH THE MMPI-2-RF

A second broad area of MMPI-2-RF scale validation has focused on applied assessment. The MMPI instruments have for decades been among the most widely used tests in clinical practice and in the training of professional psychologists (e.g., Camara et al. 2000, Mihura et al. 2017). Therefore, it is not surprising that many scholars who conduct research on the instrument have

been especially interested in addressing questions that pertain to its applied utility. This literature is considered in this section, with a focus on particularly important areas of research, as covering it in full would be far beyond the scope of one article.

Mental Health Evaluations

The MMPI instruments were designed for the assessment of psychopathology and personality, and, therefore not surprisingly, most of the scales' applied validation has occurred in such settings. Several validation efforts have focused on elucidating the construct validity associated with MMPI-2-RF scale scores in mental health settings. This work began with an examination of the RC Scales, with studies showing that they generally outperformed their original Clinical Scale counterparts, especially with respect to discriminant validity, in predicting scores on conceptually relevant criterion measures (e.g., Forbey & Ben-Porath 2007; Handel & Archer 2008; Sellbom et al. 2006a,b; Simms et al. 2005). Further research indicated substantial support for the RC Scales based on their associations with clinician ratings on a variety of intake and process variables (Arbisi et al. 2008). Subsequent studies have focused on the full set of MMPI-2-RF scales (e.g., Moultrie & Engel 2017), augmenting the already extensive correlate data from various mental health settings reported in the MMPI-2-RF technical manual (Tellegen & Ben-Porath 2008).

Differential diagnosis. Several studies on using the MMPI-2-RF in mental health settings have focused on the assessment of symptoms associated with various diagnoses as well as in differential diagnosis. Several forms of psychopathology have been examined, particularly posttraumatic stress disorder (PTSD), personality disorders, and differential diagnosis of mood versus psychotic disorders. Wolf et al. (2008) compared the RC Scales and the Clinical Scales in the prediction of PTSD symptoms in a sample of combat veterans and found that the former incremented the latter in these predictions. In 251 National Guard soldiers who had returned from Iraq, Arbisi et al. (2011) observed that the MMPI-2-RF scale scores were substantially higher in a PTSD-diagnosed group relative to controls on most scales, with the AXY SP Scale scores demonstrating the greatest effect size. Moreover, in a sample drawn from the same population, Koffel et al. (2016) found that the PSY-5 NEGE-r Scale and the RCd Scale were particularly potent predictors of self-reported PTSD symptoms (although these authors used a restricted scale set). Similarly, Choi (2017) included RC6 and RC8 in a study of PTSD symptom development as a result of trauma in 169 Korean outpatients. These authors found that both scales were associated with PTSD symptoms, with RC8 exhibiting a large correlation with peritraumatic dissociative symptoms. Finally, Sellbom et al. (2012c) examined an a priori selected set of MMPI-2-RF scales in the assessment of different types of PTSD symptoms in a large sample of forensic disability claimants. They found that RCd and AXY were associated with a wide range of PTSD symptoms, with STW, Anger Proneness (ANP), and Social Avoidance (SAV) also being linked to hyperarousal and avoidance symptoms.

Several studies have examined associations between MMPI-2-RF scale scores and traditional personality disorders in the DSM-5. For instance, in Dutch clinical and forensic samples, Anderson et al. (2015b) examined 7 of the 10 personality disorders for which there was sufficient variability in measurement to permit meaningful analyses. They found that many of the hypothesized scales (especially those that would be considered to measure the core symptoms of each disorder) were associated with their respective personality disorders, both at the zero-order level and in a series of negative binomial regression models. Sellbom & Smith (2017) and Zahn et al. (2017) replicated these findings in, respectively, a large university sample and a large private practice sample, using self-reported personality disorder symptom measurement. Most recently, Sellbom et al. (2018) developed 10 MMPI-2-RF personality disorder spectra scales and provided

initial and promising criterion, construct, and incremental validation evidence for these scales in large university and outpatient samples.

Another set of studies has directly examined the differential diagnosis of mood and psychotic disorders. Sellbom et al. (2012a) examined the MMPI-2-RF scores of three groups of psychiatric inpatients with major depression, bipolar disorder, and schizophrenia. By and large, the THD Scales (especially RC6) differentiated the schizophrenia group from the other two; RC1 (Somatic Complaints), RC2, and Malaise (MLS), along with low scores on Hypomanic Activation (RC9), differentiated the major depression groups from the other two; and finally, the Activation (ACT) Scale differentiated the patients with bipolar disorder from the other two groups. In a similar study, Watson et al. (2011) showed that ACT scores were associated with the best classification accuracies in differentiating patients with depressive or bipolar disorders, even when the bipolar patients' most recent episode was depression. Most recently, Lee et al. (2018) examined conceptually relevant MMPI-2-RF scores in groups of clinician-generated diagnoses of schizophrenia and major depressive disorder using a large sample of psychiatric inpatients. They observed a consistent pattern wherein scores on the four THD Scales were substantially higher in the schizophrenia group, whereas the selected Internalizing Scales (especially RCd, RC2, and SFD) were higher in the major depression group.

Treatment implications. Several studies have examined the utility of the MMPI-2-RF scales in predicting various therapy-disruptive behaviors. For instance, Scholte et al. (2012a) studied 106 patients with personality disorders who were undergoing treatment and found that Antisocial Behavior (RC4), Disconstraint-Revised (DISC-r), and RC2, as well as low scores on RC7, were associated with inappropriate anger outbursts, impulsive acts, parasuicidal behavior, and contact violations. Scholte et al. (2012b) followed up with 179 patients who had undergone treatment and found that RC2 and RC8 predicted lesser symptomatic improvement over time.

A few studies have also focused specifically on premature termination. Tarescavage et al. (2015d) examined 453 community mental health patients and found that RC2 and RC7, but not RCd, were associated with a latent construct representing premature termination. Anestis et al. (2015b) found that externalizing scales, in particular BXD and JCP, predicted premature termination in the context of all MMPI-2-RF scales in a sample of 457 psychology clinic patients. In a sample drawn from the same clinic ($n = 511$), Anestis et al. (2015a) showed that the Validity Scales augmented the substantive scales with respect to predicting premature termination.

Presurgical Psychological Evaluations

The MMPI-2-RF is commonly used to assess psychological factors with implications for treatment adherence and outcomes in patients undergoing various surgical procedures. The majority of this work has focused on two particular forms of medical interventions: bariatric surgery and spinal surgery.

Wygant et al. (2007) and Tarescavage et al. (2013b) examined MMPI-2-RF scores in a large sample of individuals undergoing bariatric surgery at one clinic and found that several scales predicted negative outcomes. For instance, Wygant et al. (2007) showed that RC4 was the best predictor of poor adherence to follow-up subsequent to surgery. Many of the internalizing scales were associated with various indicators of poor mental health and past suicide attempts, as well as poor quality of life, which are all psychosocial variables that predict adverse outcomes. Marek, Ben-Porath, and Heinberg and colleagues (see Marek et al. 2016 for a review) have conducted multiple studies of the concurrent and predictive validity of MMPI-2-RF scales in the context of bariatric surgery using data from a large patient database. For instance, Marek et al. (2013) have replicated many of the findings discussed here, in that MMPI-2-RF scale scores were associated

with a range of psychosocial variables, including maladaptive eating and mental health problems. These studies have also used the MMPI-2-RF scales to predict binge eating disorder in bariatric surgery candidates (Marek et al. 2014a). Most substantially, several of these studies have examined the prospective validity of MMPI-2-RF scale scores in predicting both poor treatment adherence as well as adverse outcomes postsurgery, including at 1 to 3 months (Marek et al. 2014b), at up to 1 year (Marek et al. 2015b), and at up to 5 years (Marek et al. 2017a). One particularly notable finding in this prospective research is that MMPI-2-RF scores become stronger outcome predictors as the time from presurgery to follow-up increases. This finding is likely owing to personality rather than contextual factors having a greater role in outcome as time passes (e.g., Marek et al. 2017a).

Marek et al. (2015a, 2017b) and Block et al. (2013, 2014) have contributed substantially to understanding the ability of MMPI-2-RF scores to predict concurrent and future risk in spine surgery and candidates for spinal cord stimulators. This research has been conducted with multiple samples drawn from the same population. Block et al. (2013) demonstrated good concurrent validity for MMPI-2-RF scores in relation to a number of emotional and behavioral psychosocial variables associated with adverse surgery outcomes. Block et al. (2014) noted that RCd was a particularly potent predictor of poor adjustment postsurgery, with RC2 being a good indicator of postsurgery depression and RC1 and other Somatic/Cognitive Scales contributing independently to the prediction of somatic sensitivity. Marek et al. (2015a) examined 382 individuals who underwent presurgical screening and then assessed their early postoperative outcomes. Several of the Internalizing, Somatic/Cognitive, and Interpersonal MMPI-2-RF Scales were associated with negative outcomes, including pain and pain-related interference with lifestyle.

Forensic Psychological Evaluations

There are several psycholegal questions in forensic psychological assessment for which MMPI-2-RF information can be useful (Sellbom & Wygant 2018). In criminal court, psychologists are often asked to address questions pertaining to competency to stand trial, criminal responsibility, risk assessment, and mitigation of sentencing, to mention a few. The test is also used in civil litigation and disability evaluations when individuals claim an injury of a psychological or neurocognitive nature. In family court, psychologists can rely upon MMPI-2-RF information in examining parents' mental health status or maladaptive personality traits, which can be important factors for judges to consider in ruling on custody arrangements that are in the best interests of the child. Several of these MMPI-2-RF uses have garnered empirical attention (see, e.g., Sellbom & Wygant 2018 for a review).

Sellbom (2017b) published descriptive findings for defendants undergoing evaluations for competency to stand trial and criminal responsibility using a large forensic pretrial sample ($n =$ 530) and showed that individuals opined by clinicians to be incompetent or not criminally responsible exhibited more severe psychopathology and fewer externalizing problems than those opined to be competent or criminally responsible. Moreover, Grossi et al. (2018) examined 136 defendants found incompetent to stand trial and undergoing competency restoration and found that the MMPI-2-RF externalizing scales, and in particular JCP, predicted success in competency restoration 90 days later.

The most substantial amount of forensic psychological research has been conducted in the violence risk-assessment context, which is not surprising as many of the psychological constructs underlying MMPI-2-RF scale scores pertain directly to risk factors identified in the broader literature (see, e.g., Tarescavage et al. 2016b). Several studies have linked MMPI-2-RF scales to violence risk prediction. Sellbom et al. (2008c) examined the RC Scales in the prediction of future intimate partner violence subsequent to the release of batterers from an intervention program. In

a sample of 483 men who had been court-ordered to complete treatment, RC4 and RC9 emerged as the best predictors of who would engage in future violence.

Two studies have examined the concurrent validity of MMPI-2-RF scale scores and risk-assessment measures. Tarescavage et al. (2018) showed that in 304 sexual offenders undergoing treatment, MMPI-2-RF externalizing scores were associated with several sexual offender risk-assessment instruments, including Static-99 (Hanson & Thornton 1999) and Level of Service Inventory-Revised (Andrews & Bonta 2000). Laurinaitytė et al. (2017) found that MMPI-2-RF externalizing scale scores were associated with scores on the Offender Assessment System (U.K. Home Off. 2002) in a Lithuanian correctional sample.

Tarescavage et al. (2014) compared 34 offenders who had violated probation with 54 offenders who had successfully completed probation requirements during the same period. They found that most of the MMPI-2-RF externalizing scales were associated with prediction of violations, but in addition, the THD and RC8 Scales from the thought dysfunction domain emerged as potent predictors. Thus, MMPI-2-RF markers of behavioral impulsivity and active symptoms of major mental illness—both identified in the extant literature as important dynamic risk factors (Douglas et al. 2013)—were found to be predictive of probation violations.

But context matters. Tarescavage et al. (2016b) examined MMPI-2-RF scales in the prediction of future violent acts in a sample from a forensic psychiatric hospital ($n = 303$). They found that only the externalizing MMPI-2-RF scales were predictive of future institutional violence. The authors proposed that a possible explanation for other symptom-based scales being nonpredictive was likely owing to the individuals tested being treated in a controlled environment. In a different study examining 128 forensic psychiatric inpatients, Grossi et al. (2015) observed that the thought dysfunction domain scales were the best predictors of aggression within the institution, and they also argued for a variety of contextual factors that would explain these results. Thus, different contexts likely pull different risk factors to emerge as most potent, highlighting the importance of considering both individual differences and environmental context when conducting risk assessments.

Psychopathic personality disorder frequently emerges as a potent risk factor in the literature, and its assessment is often embedded within various violent risk assessment tools [e.g., the Historical Clinical Risk Management-20 (HCR-20), version 3; Douglas et al. 2013]. The MMPI-2-RF has demonstrated utility in capturing psychopathic personality traits, both with standard scales (e.g., Klein Haneveld et al. 2017, Sellbom et al. 2007a, Wygant & Sellbom 2012) as well as with psychopathy-specific indices and scales (e.g., Sellbom et al. 2012b, 2016). Further research into how such measurement translates into risk predictions for the MMPI-2-RF is necessary.

One particular study has focused on self- rather than other-directed violence. In a sample of 229 forensic psychiatric patients, Glassmire et al. (2016) examined the validity of the SUI scale in predicting suicidal attempts within 12 months of testing. This scale was associated with a small-to-moderate correlation ($r = 0.28$) with future suicide attempts, and this effect remained statistically significant after historical attempts and current suicidal ideation expressed during the interview had been accounted for. The SUI Scale also outperformed scales reflective of depressive symptoms more generally (i.e., RCd and RC2) in these predictions.

Finally, a substantial body of work has considered the use of the MMPI-2-RF in various forms of family court evaluations (e.g., Archer et al. 2012, Kauffman et al. 2015, Pinsoneault & Ezzo 2012, Resendes & Lecci 2012, Solomon et al. 2014). Most of these studies have provided descriptive data for both child custody and parental capacity evaluations in several different samples (Archer et al. 2012, Kauffman et al. 2015, Pinsoneault & Ezzo 2012, Resendes & Lecci 2012). These studies are important because they allow forensic examiners to know whether someone who is being evaluated is scoring in a manner that is typical or atypical for the setting. More research is needed, however, to examine the utility of MMPI-2-RF scale scores in predicting outcomes in this context.

Evaluating Public Safety Personnel

The MMPI instruments have a long history of being used to screen public safety personnel, and the MMPI-2-RF has quickly become one of the most frequently used measures in this context (Corey & Ben-Porath 2018). The first study relevant to the MMPI-2-RF examined the utility of the RC Scales in predicting negative outcomes in a sample of 237 hired police officers who had been administered the MMPI-2 during their preemployment evaluations (Sellbom et al. 2007b). This study highlighted the importance of disattenuating correlations between MMPI scores and prospective outcomes due to the influences of range restriction (the average scores and associated standard deviations on the RC Scales were low, and negative outcomes were infrequent) resulting from various selection factors. Moreover, Sellbom et al. (2007b) showed that lower T scores than typical for clinical interpretation were necessary to identify potential risk for negative outcomes. Several RC Scales, and in particular Cynicism (RC3) and Ideas of Persecution (RC6), were associated with a substantial risk for being terminated on the job and poor supervisor ratings in a variety of important domains.

These findings have been replicated and extended to several other samples using the full set of MMPI-2-RF scales. Tarescavage et al. (2015a,b,c,e; 2016a) have found that the MMPI-2-RF scales are associated with a wide range of problems occurring while attending the police academy and later on the job, using different criterion modalities (e.g., clinician ratings, supervisor ratings, employment records). These outcomes have included various procedural violations, uncooperative attitudes toward peers and supervisors, and behavioral misconduct while on duty. Furthermore, in a sample of 277 male police officer candidates, Detrick et al. (2016) also showed substantial convergence between MMPI-2-RF and Inwald Personality Inventory scale scores (Inwald 1992). These findings indicated that the MMPI-2-RF scale scores can capture a substantial amount of the variance derived from a personality inventory designed specifically for use in identifying problematic traits and behaviors in police.

Summary

Overall, the literature reviewed in this section represents merely a snapshot of the voluminous research conducted on the applied use of the MMPI-2-RF in various settings and contexts. Interested readers are encouraged to examine the literature in greater depth. What can be concluded, though, is that the MMPI-2-RF has demonstrated utility in measuring a number of important factors in various contexts (e.g., treatment implications in mental health settings, adverse surgical outcomes in medical settings, future risk for violence in forensic assessments, and future disciplinary and behavioral problems among public safety officers).

CRITICISMS OF THE MMPI-2-RF AND ASSOCIATED RESPONSES

The introduction of new versions of the MMPI has met with criticism from authors who favor the original Clinical Scales and, in particular, the code-type approach to their interpretation. However, as detailed next, the criticisms levied against the MMPI-2-RF are inconsistent with the empirical data reviewed earlier. Following are the primary critiques of the instrument and associated responses to them.[4]

---

[4]This section considers only scholarly criticisms. There have been other criticisms and arguments levied against using the MMPI-2-RF, mostly by these same authors, but these were not deemed scholarly and therefore unbefitting for a scientific journal.

Item Coverage and Missing Information

Butcher and colleagues (e.g., Butcher 2010, Butcher & Williams 2012, Butcher et al. 2015) have criticized the MMPI-2-RF for including only 60% of the 567 MMPI-2 items and have concluded on that basis (rather than on empirical evidence) that, as a consequence, clinicians using the MMPI-2-RF are missing information about important mental health problems and personality traits relevant to clinical and forensic assessments. This criticism does not appear to consider that a primary goal of the MMPI-2-RF was to capture the clinically relevant substance of the MMPI-2 item pool with a more efficient set of scales that are psychometrically up to date (Tellegen & Ben-Porath 2008). Data provided in the MMPI-2-RF technical manual can be used to gauge the authors' success in meeting this goal (Tellegen & Ben-Porath 2008). Correlations between all MMPI-2 and MMPI-2-RF scale scores in the test's normative sample, a large outpatient mental health sample, and a large psychiatric inpatient sample are provided. These data demonstrate that variance associated with each MMPI-2 scale score is represented adequately by the more efficient set of MMPI-2-RF scales (see Ben-Porath & Flens 2012 for a detailed discussion of this issue).

Psychometric Performance of the Validity Scales

Some authors have raised questions about the MMPI-2-RF Validity Scales (Butcher et al. 2015, Rogers & Granacher 2011, Rogers et al. 2010). In the manual for the revised version of the Structured Interview of Reported Symptoms (the SIRS-2), Rogers et al. (2010) cautioned against using the MMPI-2-RF Validity Scales because they are untested and revised versions of their MMPI-2 counterparts. However, two meta-analyses, including one conducted subsequently by Rogers' group, have since been published (Ingram & Ternes 2016, Sharf et al. 2017). As discussed earlier, these meta-analyses indicate that the MMPI-2-RF overreporting scales perform quite well in differentiating genuine patients from individuals who are deemed to be malingering or to be otherwise overreporting, with effect sizes commensurate with those observed for the MMPI-2 Validity Scales (see Rogers et al. 2003).

Psychometric Performance of the Specific Problems Scales

Butcher and colleagues (e.g., Butcher 2010, Butcher & Williams 2012, Butcher et al. 2015) have recommended against using the SP Scales, owing to a lack of information about their development, their low reliability, and their limited research base. Their conclusions are inconsistent with the substantial research base of the MMPI-2-RF. The technical manual presents thousands of correlations between SP Scale scores and 605 independent criteria obtained from a range of settings using diverse criterion modalities and relying on numerous databases that have been reported in studies that have met the threshold for publication in top-tier assessment and psychopathology journals (e.g., Sellbom 2016, 2017a; Sellbom et al. 2007a). Butcher et al. (2015) focused their critique on forensic settings in particular, but did not consider the voluminous literature describing associations between MMPI-2-RF SP Scales and conceptually relevant validity criteria in forensic and correctional psychology settings (e.g., Anderson et al. 2015b; Glassmire et al. 2016; Sellbom et al. 2012c; Tarescavage et al. 2014, 2016b). Moreover, the low reliability estimates of internal consistency that Butcher and colleagues mention are in some instances an artifact of range restriction, whereas the standard error of measurement values fall in the acceptable range for the majority of scales (see Ben-Porath & Flens 2012), and, ultimately, the validity data just cited most directly address concerns about the psychometric properties of SP Scale scores.

Sensitivity to Psychopathology

Different sets of scholars have criticized the MMPI-2-RF for both its oversensitivity to psychopathology (Odland et al. 2011, 2015) and undersensitivity to psychopathology (Butcher 2010, Butcher & Williams 2012, Butcher et al. 2015). In terms of the former, Odland et al. (2011, 2015) have contended that the rate of elevation of MMPI-2-RF scale scores in the MMPI-2-RF normative sample means that the instrument overpathologizes healthy individuals, but Tarescavage & Ben-Porath (2015) and Tarescavage et al. (2013a) have responded that Odland et al.'s premise is rooted in the normative sample being a normal one, which is not the case. Rather, it is a community normative sample that includes individuals with mental health problems, and Tarescavage et al. (2013a) showed that the rate of elevation was consistent with epidemiology data on the prevalence rates of disorders in the community.

Butcher and colleagues, however, argue that the MMPI-2-RF RC Scales are, relative to their MMPI-2 Clinical Scale counterparts, undersensitive to psychopathology. Butcher & Williams (2012; see also Butcher et al. 2015) listed a number of studies to support their claims. Most were unpublished dissertations that compared Clinical Scale and RC Scale profiles, indicating more elevations on the former scale set relative to the RC Scales. Ben-Porath & Flens (2012) and Ben-Porath (2018) critiqued Butcher and colleagues' analysis of this literature and noted that the RC Scale elevations reported in these studies are consistent with conceptual expectations of the populations under examination. Moreover, Butcher and colleagues have repeatedly failed to acknowledge the only published study to date that directly empirically compared the relative sensitivities of Clinical and RC Scales in two large outpatient and inpatient samples (Sellbom et al. 2006b). In brief, Sellbom et al. (2006b) showed that Clinical and RC Scale counterparts (e.g., Clinical Scale 1 and RC1) were in agreement regarding elevation versus nonelevation in the great majority of cases. Cases for which discrepancies were found (i.e., Clinical Scale was elevated but RC counterpart was not or vice versa) could be accounted for by demoralization, K correction of the Clinical Scales, or the effects of problematic subtle items. Importantly, in such discrepant cases, the RC Scales' elevation (or nonelevation) was generally more consistent with external criterion data (i.e., more valid).

Summary of Criticisms

Overall, much of the criticism levied against the MMPI-2-RF is inconsistent with the empirical literature. The MMPI-2-RF scale scores have been extensively validated in a number of populations, as reviewed extensively in previous sections. Moreover, the MMPI-2-RF technical manual has been available since the publication of the test, but is rarely if ever considered when critics claim there is a lack of research on psychometric properties and validity. Claims of hyper- and hyposensitivity to psychopathology are also inconsistent with the empirical literature that has directly examined this issue (e.g., Sellbom et al. 2006b, Tarescavage et al. 2013a). Of course, the MMPI-2-RF is not without valid criticism, some of which is discussed in the next section.

CONCLUSIONS AND FUTURE DIRECTIONS

At the time of its publication, the MMPI was a trailblazer with respect to scale construction and psychometric measurement. In its early years, it was the most widely used measure of psychopathology in both basic and applied research. However, as chronicled in this review, the absence of further development and refinement of the original Clinical Scales led psychopathology and personality researchers to lose interest in the inventory, severing the mutually beneficial

pipeline of clinically rich data and conceptually grounded test applications. Concerns about the Clinical Scales were left unaddressed by the MMPI-2. The development of the MMPI-2-RF, published in 2008, has allowed for modernization of the instrument, relinking it with contemporary psychopathology and personality research. In addition to making available scales constructed following contemporary psychometric standards, the test now measures dimensional transdiagnostic psychological constructs that are the focus of current research in psychopathology and personality.

The literature reviewed in this article indicates that the MMPI-2-RF assesses constructs relevant to the most significant developments in the field, HiTOP and AMPD, and few, if any, current omnibus clinical inventories have its level of empirical support for this purpose (Lee et al. 2017, Sellbom & Arbisi 2017). These research findings speak directly to the construct validity of MMPI-2-RF scale scores. Significantly, this advancement has not been attained at the cost of the applied utility of the instrument. As also reviewed in this article, MMPI-2-RF scale scores continue to be associated with a large number of important applied assessment outcomes across a wide range of settings, including (but not limited to) mental health, forensic, and medical, and the screening of public safety personnel.

The MMPI-2-RF is well positioned to continue serving as a conceptually up-to-date, empirically grounded inventory for assessing personality and psychopathology in the twenty-first century. However, further work is needed for the instrument to remain at the forefront of applied assessment and regain the attention of basic psychopathology and personality researchers. The MMPI-2-RF normative sample was collected in the 1980s, and much has changed during the past three decades in the population it is intended to represent (e.g., access to the Internet, normative social values, changes in racial/ethnic composition). Moreover, because development of the MMPI-2-RF relied on the 567 items available on the MMPI-2, it was constrained to the construct measurements available within this pool. Although it constitutes a rich source of clinical information, some contemporary constructs cannot be assessed adequately. Indeed, assessment of eating pathology, nonsuicidal self-injury, emotional dysregulation, narcissism, callousness, compulsivity, and sexual dysfunction are some areas that could be improved upon with new items. Finally, the MMPI-2-RF continues to have items that use somewhat outdated language, questionable grammar, and difficult double-barreled wording.

The development of the MMPI-3 has been commissioned by the University of Minnesota Press, the test's publisher (Univ. Minn. Press 2018). The stated goals of the publisher are to address several of the issues just raised, including collecting a new, representative normative sample. An expanded form of the MMPI-2-RF has been developed, with candidate items for the next version of the inventory canvassing most of the domains just listed. It will be important for the MMPI-3 authors to consider these improvements to remain current with contemporary psychopathology developments, such as HiTOP. The MMPI-2-RF provides a solid foundation for attaining this goal.

SUMMARY POINTS

1. The MMPI has evolved from an innovation that was developed via state-of-the-art procedures in the 1930s into the current MMPI-2-RF that is psychometrically up to date and aligns well with contemporary models of psychopathology.

2. The MMPI-2-RF substantive scales operationalize psychological constructs that are dimensional and transdiagnostic in nature.

3. The MMPI-2-RF Validity Scales assess various forms of response styles (inconsistent responding, indiscriminant fixed responding, overreporting, and underreporting) and have garnered substantial support for their empirical validity in such measurement.

4. The MMPI-2-RF scales map onto the promising HiTOP model, which represents a recent, comprehensive effort to organize psychopathology in a hierarchical and dimensional manner.

5. The MMPI-2-RF scales can account for most personality trait elements in the DSM-5 Alternative Model for Personality Disorders.

6. The MMPI-2-RF has amassed a substantial research base to support its applied use in various areas including (but not limited to) evaluations in mental health, presurgical, and forensic settings, as well as for public safety personnel.

7. Some authors have criticized the MMPI-2-RF on a number of grounds, including that it is oversensitive to psychopathology, has insufficient research bases for various scales, and is undersensitive to psychopathology, but these criticisms are inconsistent with the empirical literature reviewed in this article.

8. The MMPI-2-RF will serve as the primary foundation for the MMPI-3, which should include updated coverage of psychopathology and maladaptive personality traits and a new normative sample.

FUTURE ISSUES

1. Contemporary MMPI-2-RF research should aim at determining the strengths and weaknesses associated with this instrument to better inform the development of MMPI-3.

2. Several content areas of the MMPI-2-RF have been identified as needing further measurement attention, including eating pathology, nonsuicidal self-injury, emotional dysregulation, narcissism, callousness, compulsivity, and sexual dysfunction.

3. The MMPI-2 and MMPI-2-RF normative sample is now more than 30 years old and needs to be updated. Such updating is underway for the MMPI-3.

4. Further cultural equivalence research is necessary. Most support for validity equivalence comes from US subcultures (e.g., Caucasian versus African American), but given the international use of the MMPI-2-RF, cultural groups in other countries (e.g., colonizing versus indigenous populations, native versus immigrant populations) need to be considered for validity equivalence as well.

5. The MMPI-2-RF is quite promising with respect to covering contemporary psychopathology models such as HiTOP, but more research is needed to better illustrate its applied utility in this regard.

6. Although research on using the MMPI-2-RF applied assessment in a variety of contexts is substantial, more studies are needed across settings in which the instrument is frequently used, including (but not limited to) non-police personnel screening (e.g., firefighters, corrections officers, airline pilots, military), and to address various psycholegal issues (e.g., predictive validity in family court or in sexual risk assessment evaluations).

DISCLOSURE STATEMENT

ACKNOWLEDGMENTS

LITERATURE CITED

Am. Psychiatr. Assoc. 2011. American Psychiatric Association DSM-5 Development: Personality disorders. **http://www.dsm5.org/ProposedRevision/Pages/PersonalityDisorders.aspx**

Am. Psychiatr. Assoc. 2013. *Diagnostic and Statistical Manual of Mental Disorders*. Arlington, VA: Am. Psychiatr. Publ. 5th ed.

Anderson JL, Sellbom M, Ayearst L, Quilty LC, Chmielewski M, Bagby RM. 2015a. Associations between DSM-5 Section III personality traits and the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) scales in a psychiatric patient sample. *Psychol. Assess.* 27:811–15

Anderson JL, Sellbom M, Bagby RM, Quilty LC, Veltri COC, et al. 2013. On the convergence between PSY-5 domains and PID-5 domains and facets: implications for assessment of DSM-5 personality traits. *Assessment* 20:286–94

Anderson JL, Sellbom M, Pymont C, Smid W, De Saeger H, Kamphuis JH. 2015b. Measurement of DSM-5 Section II personality disorder constructs using the MMPI-2-RF in clinical and forensic samples. *Psychol. Assess.* 27:786–800

Andrews DA, Bonta J. 2000. *The Level of Service Inventory–Revised*. Toronto, ON: MHS Assess.

Anestis JC, Finn JA, Gottfried ED, Arbisi PA, Joiner TE. 2015a. Reading the road signs: the utility of the MMPI-2-Restructured Form validity scales in prediction of premature termination. *Assessment* 22:279–88

Anestis JC, Gottfried ED, Joiner TE. 2015b. The utility of MMPI-2-RF substantive scales in prediction of negative treatment outcomes in a community mental health center. *Assessment* 22:23–35

Arbisi PA, Polusny MA, Erbes CR, Thusras P, Reddy MK. 2011. The Minnesota Multiphasic Personality Inventory-2-Restructured Form in National Guard soldiers screening positive for posttraumatic stress disorder and mild traumatic brain injury. *Psychol. Assess.* 23:203–14

Arbisi PA, Sellbom M, Ben-Porath YS. 2008. Empirical correlates of the MMPI-2-Restructured Clinical (RC) Scales in psychiatric inpatients. *J. Personal. Assess.* 90:122–28

Archer EM, Hagan LD, Mason J, Handel RW, Archer RP. 2012. MMPI-2-RF characteristics of custody evaluation litigants. *Assessment* 19:14–20

Baer RA, Miller JD. 2002. Underreporting of psychopathology on the MMPI-2: a meta-analytic review. *Psychol. Assess.* 14:16–26

Ben-Porath YS. 2012. *Interpreting the MMPI-2-RF*. Minneapolis, MN: Univ. Minn. Press

Ben-Porath YS. 2013. Assessing personality and psychopathology with self-report inventories. In *Handbook of Psychology*, Vol. 10: *Assessment*, ed. JR Graham, JA Naglieri, pp. 622–44. Hoboken, NJ: Wiley

Ben-Porath YS. 2018. Of fallacies and errors, new and repeated: a rejoinder to Butcher et al. (2018). *J. Personal. Assess.* In press. **https://doi.org/10.1080/00223891.2018.1522640**

Ben-Porath YS, Flens JR. 2012. Butcher and Williams's (this issue) critique of the MMPI-2-RF is slanted and misleading. *J. Child Custody* 9:223–32

Ben-Porath YS, Forbey JD. 2003. *Non-gendered norms for the MMPI-2*. Minneapolis, MN: Univ. Minn. Press

Ben-Porath YS, Tellegen A. 2008. *MMPI-2-RF: Manual for Administration, Scoring, and Interpretation*. Minneapolis, MN: Univ. Minn. Press

Block AR, Ben-Porath YS, Marek RJ. 2013. Psychological risk factors for poor outcome of spine surgery and spinal cord stimulator implant: a review of the literature and their assessment with the MMPI-2-RF. *Clin. Neuropsychol.* 27:81–107

Block AR, Marek RJ, Ben-Porath YS, Ohnmeiss DD. 2014. Associations between MMPI-2-RF scores, workers' compensation status, and spine surgery outcome. *J. Appl. Biobehav. Res.* 19:248–67

Burchett DL, Ben-Porath YS. 2010. The impact of overreporting on MMPI-2-RF substantive scale score validity. *Assessment* 17:497–516

Butcher JN, ed. 1972. *Objective Personality Assessment: Changing Perspectives*. New York: Academic

Butcher JN. 2010. Personality assessment from the nineteenth to the early twenty-first century: past achievements and contemporary challenges. *Annu. Rev. Clin. Psychol.* 6:1–20

Butcher JN, Dahlstrom WG, Graham JR, Tellegen A, Kaemmer B. 1989. *Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for Administration and Scoring*. Minneapolis, MN: Univ. Minn. Press

Butcher JN, Hass GA, Greene RL, Nelson LD. 2015. *Using the MMPI-2 in Forensic Assessment*. Washington, DC: Am. Psychol. Assoc.

Butcher JN, Williams CL. 2012. Problems with using the MMPI-2-RF in forensic evaluations: a clarification to Ellis. *J. Child Custody* 9:217–22

Caldwell AB. 2006. Maximal measurement or meaningful measurement: the interpretive challenges of the MMPI-2 Restructured Clinical (RC) Scales. *J. Personal. Assess.* 87:193–201

Camara WJ, Nathan JS, Puente AE. 2000. Psychological test usage: implications in professional psychology. *Prof. Psychol. Res. Pract.* 31:141–54

Choi JY. 2017. Posttraumatic stress symptoms and dissociation between childhood trauma and two different types of psychosis-like experience. *Child Abuse Negl.* 72:404–10

Corey DM, Ben-Porath YS. 2018. *Assessing Police and Other Public Safety Personnel Using the MMPI-2-RF*. Minneapolis, MN: Univ. Minn. Press

Crighton AH, Marek RJ, Dragon WR, Ben-Porath YS. 2017. Utility of the MMPI-2-RF validity scales in the detection of simulated underreporting: Implications of incorporating a manipulation check. *Assessment* 24:853–64

Detrick P, Ben-Porath YS, Sellbom M. 2016. Associations between MMPI-2-RF (Restructured Form) and Inwald Personality Inventory (IPI) scale scores in a law enforcement preemployment screening sample. *J. Police Crim. Psychol.* 31:81–95

Detrick P, Chibnall JT. 2014. Underreporting on the MMPI-2-RF in a high-demand police officer selection context: an illustration. *Psychol. Assess.* 26:1044–49

Douglas KS, Hart SD, Webster CD, Belfrage H. 2013. *HCR-20V3: Assessing Risk for Violence: User Guide*. Burnaby, B.C.: Mental Health Law Policy Inst. Simon Fraser Univ.

Ellis A. 1946. The validity of personality questionnaires. *Psychol. Bull.* 43:385–440

Finn SE, Kamphuis JH. 2006. The MMPI-2 RC Scales and restraints to innovation, or "What have they done to my song?" *J. Personal. Assess.* 87:202–10

Forbey JD, Ben-Porath YS. 2007. A comparison of the MMPI-2 Restructured Clinical (RC) and Clinical Scales in a substance abuse treatment sample. *Psychol. Serv.* 4:46–58

Forbey JD, Lee TTC, Ben-Porath YS, Arbisi PA, Gartland D. 2013. Associations between MMPI-2-RF validity scale scores and extra-test measures of personality and psychopathology. *Assessment* 20:448–61

Glassmire DM, Tarescavage AM, Burchett D, Martinez J, Gomez A. 2016. Clinical utility of the MMPI-2-RF SUI items and scale in a forensic inpatient setting: association with interview self-reports and future suicidal behavior. *Psychol. Assess.* 28:1502–9

Grossi LM, Green D, Belfi B, McGrath RE, Griswald H, Schreiber J. 2015. Identifying aggression in forensic inpatients using the MMPI-2-RF: an examination of MMPI-2-RF scale scores and estimated psychopathy indices. *Int. J. Forensic Ment.* 14:231–44

Grossi LM, Green D, Schneider M, Belfi B, Segal S. 2018. Personality, psychiatric, and cognitive predictors of length of time for competency to stand trial restoration. *Int. J. Forensic Mental Health* 17:167–80

Handel RW, Archer RP. 2008. An investigation of the psychometric properties of the MMPI-2 Restructured Clinical (RC) Scales with mental health inpatients. *J. Personal. Assess.* 90:239–49

Hanson RK, Thornton D. 1999. *Static-99: Improving Actuarial Risk Assessments for Sex Offenders*. Ottawa, Ont.: Solicit. Gen. Can.

Harkness AR, Finn JA, McNulty JL, Shields SM. 2012. The Personality Psychopathology Five (PSY–5): recent constructive replication and assessment literature review. *Psychol. Assess.* 24:432–43

Harkness AR, McNulty JL. 1994. The Personality Psychopathology Five (PSY-5): issues from the pages of a diagnostic manual instead of a dictionary. In *Differentiating Normal and Abnormal Personality*, ed. S Strack, M Lorr, pp. 291–315. New York: Springer

Haslam N, Holland E, Kuppens P. 2012. Categories versus dimensions in personality and psychopathology: a quantitative review of taxometric research. *Psychol. Med.* 42:903–20

Hathaway SR. 1960. Foreword. In *An MMPI Handbook: A Guide to Use in Clinical Practice and Research*, ed. WG Dahlstrom, GS Welsh, pp. vii-xi. Minneapolis, MN: Univ. Minn. Press

Hathaway SR. 1972. Foreword. In *An MMPI Handbook*, Vol. 1: *Clinical Interpretation*, ed. GS Welsh, WG Dahlstrom, pp. xiii-iv. Minneapolis, MN: Univ. Minn. Press

Hathaway SR, McKinley JC. 1940. A multiphasic personality schedule (Minnesota): I. Construction of the schedule. *J. Psychol.* 10:249–54

Hathaway SR, McKinley JC. 1943. *The Minnesota Multiphasic Personality Inventory*. Minneapolis, MN: Univ. Minn. Press

Helmes E, Reddon JR. 1993. A perspective on developments in assessing psychopathology: a critical review of the MMPI and MMPI-2. *Psychol. Bull.* 113:453–71

Hoelzle JB, Meyer GJ. 2008. The factor structure of the MMPI-2 Restructured Clinical (RC) Scales. *J. Personal. Assess.* 90:443–55

Ingram PB, Ternes MS. 2016. The detection of content-based invalid responding: a meta-analysis of the MMPI-2-Restructured Form's (MMPI-2-RF) over-reporting validity scales. *Clin. Neuropsychol.* 30:473–96

Insel T, Cuthbert B, Garvey M, Heinssen R, Pine DS, et al. 2010. Research domain criteria (RDoC): toward a new classification framework for research on mental disorders. *Am. J. Psychiatry* 167:748–51

Inwald RE. 1992. *Inwald Personality Inventory Technical Manual (Revised)*. New York: Hilson Res.

Kauffman CM, Stolberg R, Madero J. 2015. An examination of the MMPI-2-RF (Restructured Form) with the MMPI-2 and MCMI-III in child custody litigants. *J. Child Custody* 12:129–51

Klein Haneveld E, Kamphuis JH, Smid W, Forbey JD. 2017. Using MMPI-2-RF correlates to elucidate the PCL-R and its four facets in a sample of male forensic psychiatric patients. *J. Personal. Assess.* 99:398–407

Koffel E, Kramer MD, Arbisi PA, Erbes CR, Kaler M, Polusny MA. 2016. Personality traits and combat exposure as predictors of psychopathology over time. *Psychol. Med.* 46:209–20

Kotov R, Krueger RF, Watson D, Achenbach TM, Althoff RR, et al. 2017. The Hierarchical Taxonomy of Psychopathology (HiTOP): a dimensional alternative to traditional nosologies. *J. Abnorm. Psychol.* 126:454–77

Kraeplin E. 1921. Über Entwurzelung. *Z. Gesamte Neurol. Psychiatr.* 63:1–8

Krueger RF, Derringer J, Markon KE, Watson D, Skodol AE. 2012. Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychol. Med.* 42:1879–90

Krueger RF, Markon KE. 2014. The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annu. Rev. Clin. Psychol.* 10:477–501

Krueger RF, Markon KE, Patrick CJ, Benning SD, Kramer MD. 2007. Linking antisocial behavior, substance use, and personality: an integrative quantitative model of the adult externalizing spectrum. *J. Abnorm. Psychol.* 116:645–66

Laurinaitytė I, Laurinavičius A, Ustinavičiūtė L, Wygant DB, Sellbom M. 2017. Utility of the MMPI-2 Restructured Form (MMPI-2-RF) in a sample of Lithuanian male offenders. *Law Hum. Behav.* 41:494–505

Lee TTC, Graham JR, Arbisi PA. 2018. The utility of MMPI-2-RF scale scores in differential diagnosis of schizophrenia and major depressive disorder. *J. Personal. Assess.* 100:305–12

Lee TTC, Sellbom M, Hopwood CJ. 2017. Contemporary psychopathology assessment: mapping major personality inventories onto empirical models of psychopathology. In *Neuropsychological Assessment in the Age of Evidence-Based Practice: Diagnostic and Treatment Evaluations*, ed. SC Bowden, pp. 64–94. New York: Oxford Univ. Press

Loevinger J. 1972. Some limitations of objective personality tests. See Butcher 1972, pp. 45–58

Lubin B, Wallis RR, Paine C. 1971. Patterns of psychological test usage in the United States: 1935–1969. *Prof. Psychol.* 2:70–74

Marek RJ, Ben-Porath YS, Ashton K, Heinberg LJ. 2014a. Impact of using DSM-5 criteria for diagnosing binge eating disorder in bariatric surgery candidates: change in prevalence rate, demographic characteristics, and scores on the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF). *Int. J. Eat. Disord.* 47:553–57

Marek RJ, Ben-Porath YS, Heinberg LJ. 2016. Understanding the role of psychopathology in bariatric surgery outcomes. *Obes. Rev.* 17:126–41

Marek RJ, Ben-Porath YS, Merrell J, Ashton K, Heinberg LJ. 2014b. Predicting one and three month postoperative somatic concerns, psychological distress, and maladaptive eating behavior in bariatric surgery candidates with the Minnesota Multiphasic Personality Iniventory-2-Restructured Form (MMPI-2-RF). *Obes. Surg.* 24:631–39

Marek RJ, Ben-Porath YS, Van Dulmen M, Ashton K, Heinberg LJ. 2017a. Using the pre-surgical psychological evaluation to predict 5-year weight-loss outcomes in bariatric surgery patients. *Surg. Obes. Relat. Dis.* 13:514–21

Marek RJ, Ben-Porath YS, Windover AK, Tarescavage AM, Merrell J, et al. 2013. Assessing psychosocial functioning of bariatric surgery candidates with the Minnesota Multiphasic Personality Inventory-2-Restructured Form. *Obes. Surg.* 23:1864–73

Marek RJ, Block AR, Ben-Porath YS. 2015a. The Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF): incremental validity in predicting early post-operative outcomes in spine surgery candidates. *Psychol. Assess.* 27:114–24

Marek RJ, Block AR, Ben-Porath YS. 2017b. Validation of a psychological screening algorithm for predicting spine surgery outcomes. *Assessment*. In press. **https://doi.org/10.1177/1073191117719512**

Marek RJ, Tarescavage AM, Ben-Porath YS, Ashton K, Heinberg LJ. 2015b. Replication and evaluation of a proposed two-factor Binge Eating Scale (BES) structure in a sample of bariatric surgery candidates. *Surg. Obes. Relat. Dis.* 11:659–66

McGrath RE, Mitchell M, Kim BH, Hough L. 2010. Evidence for response bias as a source of error variance in applied assessment. *Psychol. Bull.* 136:450–70

McNulty JL, Overstreet SR. 2014. Viewing the MMPI-2-RF structure through the Personality Psychopathology Five (PSY-5) lens. *J. Personal. Assess.* 96:151–57

Meehl PE. 1956. Wanted—a good cookbook. *Am. Psychol.* 11:263–72

Meehl PE. 1972. Reactions, reflections, projections. See Butcher 1972, pp. 131–89

Mihura JL, Roy M, Graceffo RA. 2017. Psychological assessment training in clinical psychology doctoral programs. *J. Personal. Assess.* 99:153–64

Morey LC. 2012. Detection of response bias in applied assessment: comment on McGrath et al. (2010). *Psychol. Inj. Law* 5:153–61

Moultrie JK, Engel RR. 2017. Empirical correlates for the Minnesota Multiphasic Personality Inventory-2-Restructured Form in a German inpatient sample. *Psychol. Assess.* 29:1273–89

Nichols DS. 2006. The trials of separating bath water from baby: a review and critique of the MMPI-2 Restructured Clinical Scales. *J. Personal. Assess.* 87:121–38

Norman W. 1972. Psychometric considerations for a revision of the MMPI. See Butcher 1972, pp. 59–83

Odland AP, Lammy AB, Perle JG, Martin PK, Grote CL. 2015. Reaffirming normal: the high risk of pathologizing healthy adults when interpreting the MMPI-2-RF. *Clin. Neuropsychol.* 29:38–52

Odland AP, Martin P, Perle J, Simco ER, Mittenberg W. 2011. Rates of apparently abnormal MMPI-2 profiles in the normal population. *Clin. Neuropsychol.* 25:1134–44

Pinsoneault TB, Ezzo FR. 2012. A comparison of MMPI-2-RF profiles between child maltreatment and nonmaltreatment custody cases. *J. Forensic Psychol. Pract.* 12:227–37

Reed GM. 2018. Progress in developing a classification of personality disorders for ICD-11. *World Psychiatry* 17:227–29

Resendes J, Lecci L. 2012. Comparing the MMPI-2 scale scores of parents involved in parental competency and child custody assessments. *Psychol. Assess.* 24:1054–59

Rogers R, Granacher RP. 2011. Conceptualization and assessment of malingering. In *Handbook of Forensic Assessment: Psychological and Psychiatric Perspectives*, ed. EY Drogin, FM Dattilio, RL Sadoff, TG Guthiel, pp. 659–78. Hoboken, NJ: Wiley

Rogers R, Sewell KW, Gillard ND. 2010. *SIRS-2: Structured Interview of Reported Symptoms: Professional Manual*. Lutz, FL: Psychol. Assess. Resour. 2nd ed.

Rogers R, Sewell KW, Martin MA, Vitacco MJ. 2003. Detection of feigned mental disorders: a meta-analysis of the MMPI-2 and malingering. *Assessment* 10:160–77

Rohling ML, Larrabee GJ, Greiffenstein MF, Ben-Porath YS, Lees-Haley P, et al. 2011. A misleading review of response bias: comment on McGrath, Mitchell, Kim, and Hough (2010). *Psychol. Bull.* 137:708–12

Scholte W, Tiemens BG, Verheul R, Meerman A, Eggers J, Hutschemaekers G. 2012a. Predictive validity of the MMPI-2 Clinical, PSY-5, and RC Scales for therapy disruptive behavior. *J. Psychiatr. Pract.* 18:420–29

Scholte W, Tiemens BG, Verheul R, Meerman A, Eggers J, Hutschemaekers G. 2012b. The RC Scales predict psychotherapy outcomes: the predictive validity of the MMPI-2's Restructured Clinical Scales for psychotherapeutic outcomes. *Personal. Mental Health* 6:292–302

Sellbom M. 2016. Elucidating the validity of the externalizing spectrum of psychopathology in correctional, forensic, and community samples. *J. Abnorm. Psychol.* 125:1027–38

Sellbom M. 2017a. Mapping the MMPI-2-RF Specific Problems scales onto extant psychopathology structures. *J. Personal. Assess.* 99:341–50

Sellbom M. 2017b. Using the MMPI-2-RF to characterize defendants evaluated for competency to stand trial and criminal responsibility. *Int. J. Forensic Mental Health* 16:304–12

Sellbom M, Anderson JL, Bagby RM. 2013. Assessing DSM-5 Section III personality traits and disorders with the MMPI-2-RF. *Assessment* 20:709–22

Sellbom M, Arbisi PA. 2017. Introduction to the special section: Linking the MMPI-2-RF to contemporary models of psychopathology. *J. Personal. Assess.* 99:337–40

Sellbom M, Bagby RM. 2008. Validity of the MMPI-2-RF (Restructured Form) Lr and Kr scales in detecting underreporting in clinical and nonclinical samples. *Psychol. Assess.* 20:370–76

Sellbom M, Bagby RM, Kushner S, Quilty LC, Ayearst LE. 2012a. Diagnostic construct validity of the MMPI-2-Restructured Form (MMPI-2-RF) scale scores. *Assessment* 19:176–86

Sellbom M, Ben-Porath YS, Bagby RM. 2008a. On the hierarchical structure of mood and anxiety disorders: confirmatory evidence and elaboration of a model of temperament markers. *J. Abnorm. Psychol.* 117:576–90

Sellbom M, Ben-Porath YS, Bagby RM. 2008b. Personality and psychopathology: mapping the MMPI-2 Restructured Clinical (RC) scales onto the Five Factor Model of personality. *J. Personal. Disord.* 22:291–312

Sellbom M, Ben-Porath YS, Baum LJ, Erez E, Gregory C. 2008c. Predictive validity of the MMPI-2 Restructured Clinical (RC) Scales in a batterers' intervention program. *J. Personal. Assess.* 90:129–35

Sellbom M, Ben-Porath YS, Graham JR. 2006a. Correlates of the MMPI-2 Restructured Clinical (RC) Scales in a college counseling setting. *J. Personal. Assess.* 86:89–99

Sellbom M, Ben-Porath YS, McNulty JL, Arbisi PA, Graham JR. 2006b. Elevation differences between MMPI-2 Clinical and Restructured Clinical (RC) Scales: frequency, origins, and interpretative implications. *Assessment* 13:430–41

Sellbom M, Ben-Porath YS, Patrick CJ, Wygant DB, Gartland DM, Stafford KP. 2012b. Development and construct validation of MMPI-2-RF indices of global psychopathy, fearless-dominance, and impulsive-antisociality. *Personal. Disord.* 3:17–38

Sellbom M, Ben-Porath YS, Stafford KP. 2007a. A comparison of measures of psychopathic deviance in a forensic setting. *Psychol. Assess.* 19:430–36

Sellbom M, Drislane LE, Johnson AK, Goodwin BE, Phillips TR, Patrick CJ. 2016. Development and validation of MMPI-2-RF scales for indexing triarchic psychopathy constructs. *Assessment* 23:527–43

Annu. Rev. Clin. Psychol. 2019.15:149-177. Downloaded from www.annualreviews.org
Access provided by University of Otago on 05/29/19. For personal use only.

Sellbom M, Fischler GL, Ben-Porath YS. 2007b. Identifying MMPI-2 predictors of police officer integrity and misconduct. *Crim. Justice Behav.* 34:985–1004

Sellbom M, Lee TTC, Ben-Porath YS, Arbisi PA, Gervais RO. 2012c. Differentiating PTSD symptomatology with the MMPI-2-RF (Restructured Form) in a forensic disability sample. *Psychiatry Res.* 197:172–79

Sellbom M, Smith A. 2017. Assessment of DSM-5 Section II personality disorders with the MMPI-2-RF in a nonclinical sample. *J. Personal. Assess.* 99:384–97

Sellbom M, Waugh MH, Hopwood CJ. 2018. Development and validation of personality disorder spectra scales for the MMPI-2-RF. *J. Personal. Assess.* 100:406–20

Sellbom M, Wygant DB. 2018. *Forensic Applications of the MMPI-2-RF: A Casebook*. Minneapolis, MN: Univ. Minn. Press

Sharf AJ, Rogers R, Williams MM, Henry SA. 2017. The effectiveness of the MMPI-2-RF in detecting feigned mental disorders and cognitive deficits: a meta-analysis. *J. Psychopathol. Behav. Assess.* 39:441–55

Shkalim E, Almagor M, Ben-Porath YS. 2017. Examining current conceptualizations of psychopathology with the MMPI-2/MMPI-2-RF Restructured Clinical Scales: preliminary findings from a cross-cultural study. *J. Personal. Assess.* 99:375–83

Simms LJ. 2006. Bridging the divide: comments on the Restructured Clinical Scales of the MMPI-2. *J. Personal. Assess.* 87:211–16

Simms LJ, Casillas A, Clark LA, Watson D, Doebbeling BI. 2005. Psychometric evaluation of the Restructured Clinical Scales of the MMPI-2. *Psychol. Assess.* 17:345–58

Skodol AE. 2012. Personality disorders in DSM-5. *Annu. Rev. Clin. Psychol.* 8:317–44

Solomon D, Morgan B, Asberg K, Achee D. 2014. Treatment implications based on measures of child abuse potential and parental mental health: Are we missing an intervention opportunity? *Child Youth Serv. Rev.* 43:153–59

Strong EK. 1938. *Manual for the Vocational Interest Blank for Men*. Palo Alto, CA: Stanford Univ. Press

Tarescavage AM, Ben-Porath YS. 2015. A response to Odland et al.'s misleading, alarmist estimates of risk for overpathologizing when interpreting the MMPI-2-RF. *Clin. Neuropsychol.* 29:183–96

Tarescavage AM, Brewster J, Corey DM, Ben-Porath YS. 2015a. Use of pre-hire MMPI-2-RF police candidate scores to predict supervisor ratings of post-hire performance. *Assessment* 22:411–28

Tarescavage AM, Cappo BM, Ben-Porath YS. 2018. Assessment of sex offenders with the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF). *Sex Abuse* 30:413–37

Tarescavage AM, Corey DM, Ben-Porath YS. 2015b. Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) predictors of police officer problem behavior. *Assessment* 22:116–32

Tarescavage AM, Corey DM, Ben-Porath YS. 2016a. A prorating method for estimating MMPI-2-RF scores from MMPI responses: examination of score fidelity and illustration of empirical utility in the PERSEREC Police Integrity Study sample. *Assessment* 23:173–90

Tarescavage AM, Corey DM, Gupton HM, Ben-Porath YS. 2015c. Criterion validity and clinical utility of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) in assessments of police officer candidates. *J. Personal. Assess.* 97:382–94

Tarescavage AM, Finn JA, Marek RJ, Ben-Porath YS, van Dulmen MHM. 2015d. Premature termination from psychotherapy and internalizing psychopathology: the role of demoralization. *J. Affect. Disord.* 174:549–55

Tarescavage AM, Fischler GL, Cappo B, Hill DO, Corey DM, Ben-Porath YS. 2015e. Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) predictors of police officer problem behavior and collateral self-report test scores. *Psychol. Assess.* 27:125–37

Tarescavage AM, Glassmire DM, Burchett D. 2016b. Introduction of a conceptual model for integrating the MMPI-2-RF into HCR-20V3 violence risk assessments and associations between the MMPI-2-RF and institutional violence. *Law Hum. Behav.* 40:626–37

Tarescavage AM, Luna-Jones L, Ben-Porath YS. 2014. Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) predictors of violating probation after felonious crimes. *Psychol. Assess.* 26:1375–80

Tarescavage AM, Marek RJ, Finn JA, Hicks A, Rapier JL, Ben-Porath YS. 2013a. Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) normative elevation rates: comparisons with epidemiological prevalence rates. *Clin. Neuropsychol.* 27:1106–20

Tarescavage AM, Wygant DB, Boutacoff LI, Ben-Porath YS. 2013b. Reliability, validity, and utility of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) in assessments of bariatric surgery candidates. *Psychol. Assess.* 25:1179–94

Tellegen A. 1985. Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In *Anxiety and the Anxiety Disorders*, ed. AH Tuma, JD Maser, pp. 681–706. Hillsdale, NJ: Erlbaum

Tellegen A, Ben-Porath YS. 2008. *MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2-Restructured Form) Technical Manual*. Minneapolis, MN: Univ. Minn. Press

Tellegen A, Ben-Porath YS, McNulty JL, Arbisi PA, Graham JR, Kaemmer B. 2003. *The MMPI-2 Restructured Clinical (RC) Scales: Development, Validation, and Interpretation*. Minneapolis, MN: Univ. Minn. Press

Tellegen A, Ben-Porath YS, Sellbom M. 2009. Construct validity of the MMPI-2 Restructured Clinical (RC) Scales: reply to Rouse, Greene, Butcher, Nichols, and Williams. *J. Personal. Assess.* 91:211–21

U.K. Home Off. 2002. *Offender Assessment System: OASys Manual v2*. London: U. K. Home Off.

Univ. Minn. Press. 2018. Announcing the development of the MMPI-3. *Univ. Minn. Press*. **https://www.upress.umn.edu/test-division/mmpi-3-announcement**

Van der Heijden PT, Rossi GM, Van der Veld MM, Derksen JJL, Egger JIM. 2013. Personality and psychopathology: higher order relations between the Five Factor Model of personality and the MMPI-2-Restructured Form. *J. Res. Personal.* 47:572–79

Watson C, Quilty LC, Bagby RM. 2011. Differentiating bipolar disorder from major depressive disorder using the MMPI-2-RF: a receiver operating characteristics (ROC) analysis. *J. Psychopathol. Behav.* 33:368–74

Watson D. 2005. Rethinking the mood and anxiety disorders: a quantitative hierarchical model for DSM-V. *J. Abnorm. Psychol.* 114:522–36

Watson D, Tellegen A. 1985. Toward a consensual structure of mood. *Psychol. Bull.* 98:219–35

Weed NC. 2006. Syndromal complexity, paradigm shifts, and the future of validation research: a comment on Nichols and Rogers, Sewell, Harrison, and Jordan. *J. Personal. Assess.* 87:217–22

WHO (World Health Organ.). 2018. *International Statistical Classification of Diseases and Related Health Problems*. Geneva: WHO. 11th rev. **https://icd.who.int/**

Wiggins CW, Wygant DB, Hoelzle JB, Gervais RO. 2012. The more you say the less it means: overreporting and attenuated criterion validity in a forensic disability sample. *Psychol. Inj. Law* 5:162–73

Wolf EJ, Miller MW, Orazem RJ, Weierich MR, Castillo DT, et al. 2008. The MMPI-2 Restructured Clinical Scales in the assessment of posttraumatic stress disorder and comorbid disorders. *Psychol. Assess.* 20:327–40

Wygant DB, Boutacoff LA, Arbisi PA, Ben-Porath YS, Kelly PH, Rupp WM. 2007. Examination of the MMPI-2 Restructured Clinical (RC) Scales in a sample of bariatric surgery candidates. *J. Clin. Psychol. Med. Settings* 14:197–205

Wygant DB, Sellbom M. 2012. Viewing psychopathy from the perspective of the Personality Psychopathology Five model: implications for DSM-5. *J. Personal. Disord.* 26:717–26

Zahn N, Sellbom M, Pymont C, Schenk PW. 2017. Associations between MMPI-2-RF scale scores and self-reported personality disorder criteria in a private practice sample. *J. Psychopathol. Behav.* 39:723–41

Contents

Errata

An online log of corrections to *Annual Review of Clinical Psychology* articles may be
found at http://www.annualreviews.org/errata/clinpsy