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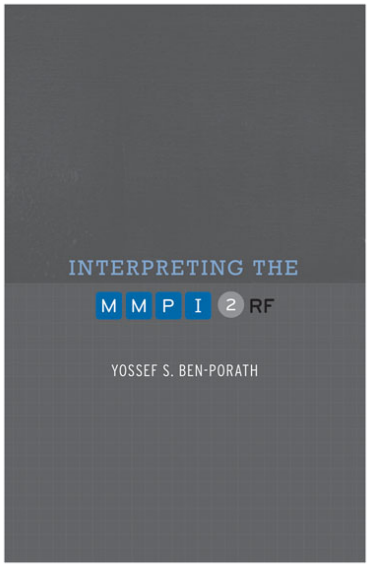

CHAPTER 4: VALIDITY SCALES

MMPI-2-RF Validity Scales

- Protocol Validity versus Instrument Validity
- Threats to Protocol Validity
  - Non-Content-Based Invalid Responding
    - Non-responding
    - Random Responding
      - Intentional
      - Unintentional
        - » Reading Difficulties
        - » Comprehension Deficits
          - Low verbal abilities
          - Non-native English speaker
        - » Disorganization
        - » Mismarked answer sheets
    - Fixed Responding
      - Acquiescence or Counter-acquiescence
      - Problems with double negatives

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MMPI-2-RF Validity Scales

- Threats to Protocol Validity
  - Content-Based Invalid Responding
    - Over-reporting
      - Intentional
        - » Malingering
        - » Factitious Disorder
      - Unintentional
        - » Catastrophizing
        - » Somatoform Disorder
    - Under-reporting
      - Intentional
        - » Denial or minimization
      - Unintentional
        - » Distorted self-concept

MMPI Validity Scales

- Original MMPI Validity Scales (1943)
  - "It is almost as though we inventory-makers were afraid to say too much about the problem because we had no effective solution for it, but it was too obvious a fact to be ignored so it was met by a polite nod." (Meehl & Hathaway, 1946, p. 526)
  - Cannot Say (CNS) – Non-responding
    - Changes dramatically with switch to Group Form
  - Lie (L) – Under-reporting
    - Fashioned after Hartshorne and May Honesty Research
  - Infrequency (F) – Random Protocol
    - Initially designed as a measure of random responding or clerical error
    - Found by military psychologists to be sensitive to over-reporting

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MMPI Validity Scales

- Original MMPI Validity Scales - K
  - K-correction and K Scale added in 1946
  - Developed by Meehl and Hathaway (1946) to serve only as a correction factor to account for under-reporting and over-reporting
  - K Scale adopted as the final standard validity scale of the MMPI in 1946

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MMPI Validity Scales

- Original MMPI Validity Scales and Threats to Protocol Validity:
  - CNS
    - Non-responding
  - L
    - Under-reporting
      - Intentional and unintentional
  - F
    - Content non-responsiveness
    - Over-reporting
      - Intentional and unintentional
  - K
    - Under-reporting
      - Intentional and unintentional

MMPI-2 Validity Scales

- MMPI-2 Validity Scales:
  - MMPI Validity Sales carried over:
    - CNS, L, F, K carried over
      - F loses four items
  - MMPI-2 Validity Scales introduced in 1989:
    - Variable Response Inconsistency – VRIN – Random Responding
    - True Response Inconsistency – TRIN – Fixed Responding
    - F Back (F_B) – Over-reporting
  - MMPI-2 Validity Scales added later:
    - Infrequency Psychopathology – F_P - Over-reporting
    - Superlative Self-Presentation – S – Under-reporting
    - Symptom Validity Scale – FBS (previously Fake Bad Scale) – Over-reporting

MMPI-2-RF Validity Scales: Development

- VRIN-r/TRIN-r
  - Based on inconsistent responses to item pairs
  - Pairs selected in the basis of statistical and semantic analyses of possible response combinations (composites):
    - Both True (TT)
    - Both False (FF)
    - First True and the second False (TF)
    - First False and the second True (FT)

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MMPI-2-RF Validity Scales: Development

- VRIN-r/TRIN-r
  - Each composite chosen for VRIN-r or TRIN-r had to meet five criteria:
    - The items had to be sufficiently correlated with each other (positively for VRIN-r, negatively for TRIN-r) in two clinical samples (seeking statistical inconsistency)
    - The observed frequency of the composite had to be low when compared to the frequency expected by chance if the two responses making up the composite were independent (seeking unlikely response combinations)
    - The combination of responses in a composite had to be judged by the authors to be inconsistent (seeking semantic inconsistency)
    - The correlation between a composite and a mini-scale made up of the two items keyed in the direction they were scored on the composite was low (seeking "content-free" composites)
    - Neither item in a composite could belong to another composite of the same type (eliminate overlap)

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MMPI-2-RF Validity Scales: Development

- TRIN-r Example:

  269. When things get really bad, I know I can count on my family for help.

  314. I hate my whole family

  – Responses are negatively correlated (-.23)
  – Observed/Expected .27 for TT and .93 for FF (TT combination much more unlikely than FF)
  – TT combination is semantically inconsistent
  – Correlation with mini-scale reflecting family problems is -.10 for TT and -.70 for FF (indicating TT combination is content-free)
  – Neither 269 nor 314 could be scored in another TT combination

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MMPI-2-RF Validity Scales: Development

- Over-reporting Scales:
  – F-r (Infrequent Responses):
    - 32 items answered infrequently (10% or less) of the men and women in the normative sample
  – Fp-r (Infrequent Psychopathology Responses):
    - 21 items answered infrequently (20% or less) by psychiatric inpatients, outpatients, and non-clinical samples
  – Fs (Infrequent Somatic Responses):
    - 16 items with somatic content answered infrequently (25% or less) of medical samples
  – FBS-r (Symptom Validity):
    - 30 of 43 FBS items included in 338-item booklet
  – RBS (Response Bias Scale):
    - 28 items correlated with failure on performance validity tests

MMPI-2-RF Validity Scales: Development

- Under-reporting Scales:
  - L-r (Uncommon Virtues):
    - 14 items describing uncommon moral virtues
  - K-r (Adjustment Validity):
    - 14 items describing good psychological adjustment

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MMPI-2-RF Validity Scales: Empirical Findings

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Psychometric Findings with the MMPI-2-RF Validity Scales

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Reliability

- Reported in Chapter 3 of MMPI-2-RF Technical Manual

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Table 3-2.

Reliability and Standard Errors of Measurement for the MMPI-2-RF Validity Scales

	Test-Retest (r_{tt})	Internal Consistency (Alpha)							Standard Error of Measurement (*SEM*)			
	MMPI-2-RF Normative Sample Subset	MMPI-2-RF Normative Sample		Outpatients, Community Mental Health Center		Psychiatric Inpatients, Community Hospital		Psychiatric Inpatients, VA Hospital	Normative (Test-Retest)	Normative (Alpha)		Median Clinical (Alpha)
	Men and Women (n = 193)	Men (n = 1,138)	Women (n = 1,138)	Men (n = 410)	Women (n = 610)	Men (n = 709)	Women (n = 473)	Men (n = 1,128)	Men and Women (n = 193)	Men (n = 1,138)	Women (n = 1,138)	Men and Women (total n = 3,330)
VRIN-r	.52	.39	.20	.33	.24	.27	.16	.24	7	9	8	9
TRIN-r	.40	.37	.23	.37	.27	.41	.27	.40	8	9	8	8
F-r	.82	.69	.71	.85	.85	.88	.87	.87	4	6	5	10
Fp-r	.71	.41	.41	.57	.53	.60	.47	.54	4	8	8	10
Fs	.51	.40	.45	.64	.68	.66	.60	.65	7	8	7	12
FBS-r	.72	.50	.56	.75	.76	.71	.75	.74	5	6	7	8
L-r	.79	.60	.61	.65	.64	.63	.57	.57	5	6	6	7
K-r	.84	.67	.68	.74	.67	.76	.75	.72	4	6	6	6

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Validity Scales

In considering the reliabilities of the Validity Scales (Table 3-2), we have to bear in mind that in study samples consisting of largely cooperative and test-competent individuals, one does not expect to encounter large and reliable variations in invalid responding. Therefore, one would not expect the reliabilities of these measures to be very high. Nonetheless, the low reliability coefficients of the two inconsistency measures, VRIN-r and TRIN-r, do stand out. But even these results are not surprising because, of the eight Validity Scales, only these two measures were designed to be content-free: indices of quasi-random response variations and response stereotypy, respectively. And since the variances of VRIN-r and TRIN-r (see Appendix D) are low as well (as would be expected), the standard errors of the two scales are small enough to support the recommended cutoff scores for declaring a test protocol invalid.

Validity

- Validation studies reported in peer-reviewed literature
- Examples:

Examining the Impact of Unscorable Item Responses on the Validity and Interpretability of MMPI-2/MMPI-2-RF Restructured Clinical (RC) Scale Scores

Assessment
XX(X) 1–13

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http://asm.sagepub.com
SAGE

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Abstract

This article examined the impact of unscorable item responses on the psychometric validity and practical interpretability of scores on the Restructured Clinical (RC) Scales of the Minnesota Multiphasic Personality Inventory-2/Minnesota Multiphasic Personality Inventory-2–Restructured Form (MMPI-2/MMPI-2-RF). In analyses conducted with five archival samples, we found that relatively large proportions of unscorable responses (defined as 10% or more of the items scored on a scale) were relatively uncommon, occurring most often in forensic samples. Simulated unscorable responses were inserted in varying proportions (10% to 90 %) in place of the responses of participants in two of the archival samples for which criterion data were available. Analyses were conducted to gauge the impact of unscorable responses on the criterion validity of scores on these scales and their interpretability. Impact on validity was evaluated by examining correlations with extra-test variables as a function of increasing levels of unscorable responding. Interpretability was evaluated by examining the proportion of participants who produced clinically elevated RC Scale scores as a function of unscorable responding. Results indicate that whereas scale score validity was relatively robust up to a level of 50% unscorable responses, interpretability was substantially compromised at only 10% unscorable responding. This suggests that prorated scores may be used to correct for the impact of unscorable responses on the interpretability of RC Scale scores at levels as high as 50% unscorable responses. Classification analyses supported this possibility. Further steps needed to explore the feasibility of using prorated scores are discussed.

Table 1. Percentage of Individuals With 10% or More Unscorable Responses on Each Restructured Clinical (RC) Scale in Various Samples

	Sample				
Scale	Outpatient $N = 1,219$	Inpatient $N = 1,872$	Forensic $N = 1,592$	Employment $N = 284$	Intervention $N = 483$
RCd (24 items)	1.2[a]	0.9	1.9	1.8	1.5
RC1 (27 items)	0.7	0.5	1.6	1.4	0.7
RC2 (17 items)	1.2	1.1	2.3	2.1	1.8
RC3 (15 items)	2.1	2.2	2.8	0.4	4.0
RC4 (22 items)	0.5	0.4	1.7	1.8	1.8
RC6 (17 items)	1.4	1.5	3.0	2.1	1.5
RC7 (24 items)	0.9	0.7	1.8	0.7	1.5
RC8 (18 items)	1.3	1.1	2.4	2.1	2.0
RC9 (28 items)	1.1	1.2	2.1	1.4	1.5
Any scale	4.3	4.0	5.9	4.3	7.5

Note. Intervention = Court-ordered intervention program.
a. Numbers are percentage of people in the sample with greater than 10% of unscorable responses on each scale.

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Table 2. Percentage of Patients with Elevations at or above 65T: Outpatients ($n = 804$)

	Percentage Unscorable Responses Inserted								
Scale	None	10	20	30	40	50	60	70	80
RCd	54/54	46/44	40/36	30/17	18/4	5/—[a]	—/—	—/—	—/—
RC1	37/43	31/37	28/29	21/22	19/15	12/5	3/1	—/—	—/—
RC2	33/45	26/37	17/26	5/10	5/13	—/3	—/—	—/—	—/—
RC3	15/22	6/11	2/4	—/—	—/—	—/—	—/—	—/—	—/—
RC4	36/37	27/26	16/19	8/12	4/6	—/1	—/—	—/—	—/—
RC6	36/34	30/29	29/26	22/17	21/17	15/14	9/7	5/3	1/1
RC7	28/28	20/18	14/10	7/3	3/—	1/—	—/—	—/—	—/—
RC8	19/18	15/16	13/13	10/8	5/4	3/3	1/—	—/—	—/—
RC9	11/9	4/4	—/1	—/—	—/—	—/—	—/—	—/—	—/—
Any	80/85	75/79	68/75	56/57	49/49	32/32	17/15	5/5	2/1

Note. Percentages for men ($n = 327$) are before the forward slash, and percentages for women ($n = 477$) are after the forward slash.
a. Dashes indicate that less than half of 1% of the indicated sample was elevated on that scale.

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Table 3. Percentage of Patients with Elevations at or above 75T: Outpatients (n = 804)

	Percentage Unscorable Responses Inserted								
	None	10	20	30	40	50	60	70	80
RCd	31/25	20/11	11/2	—/—[a]	—/—	—/—	—/—	—/—	—/—
RC1	21/20	16/13	12/7	7/3	4/1	2/1	—/—	—/—	—/—
RC2	19/20	13/13	6/6	—/—	—/—	—/—	—/—	—/—	—/—
RC3	4/4	—/—	—/—	—/—	—/—	—/—	—/—	—/—	—/—
RC4	11/9	4/5	1/2	—/1	—/—	—/—	—/—	—/—	—/—
RC6	8/9	4/7	3/4	1/1	1/1	—/—	—/—	—/—	—/—
RC7	11/9	4/3	1/—	1/—	—/—	—/—	—/—	—/—	—/—
RC8	7/5	5/4	3/2	1/1	—/—	—/—	—/—	—/—	—/—
RC9	3/2	1/—	—/—	—/—	—/—	—/—	—/—	—/—	—/—
Any	58/59	42/45	32/30	13/12	8/7	2/2	—/—	—/—	—/—

Note. Percentages for men (n = 327) are before the forward slash, and percentages for women (n = 477) are after the forward slash.
a. Dashes indicate that less than half of 1% of the indicated sample was elevated on that scale.

INTERPRETING THE MMPI 2 RF

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Psychometric Functioning of the MMPI-2-RF VRIN-r and TRIN-r Scales With Varying Degrees of Randomness, Acquiescence, and Counter-Acquiescence

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In the present study, the authors evaluated the effects of increasing degrees of simulated non-content-based (random or fixed) responding on scores on the newly developed Variable Response Inconsistency-Revised (VRIN-r) and True Response Inconsistency-Revised (TRIN-r) scales of the Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF; Y. S. Ben-Porath & A. Tellegen, 2008) and compared the performance of these new scales with the existing VRIN and TRIN scales of the MMPI-2 (J. N. Butcher et al., 2001). The results support the interpretation of VRIN-r and TRIN-r scores as measures of random and fixed responding, respectively. Furthermore, the authors examined how scores on the Restructured Clinical (RC) scales (A. Tellegen et al., 2003) are affected by increasing levels of non-content-based responding and offer practical interpretive recommendations for test users. Finally, the results of the present study indicate that RC validity coefficients are relatively robust in the face of moderate degrees of non-content-based responding.

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Table 1
MMPI-2 VRIN and MMPI-2-RF VRIN-r Mean T-Scores and Percentage of Cases With T-Scores ≥ 80 for Varying Degrees of Random Response Insertion—Normative Sample (n = 2,109)

Random insertion percentage	VRIN		Percentage ≥ *T*-score of 80	VRIN-r		Percentage ≥ *T*-score of 80
	M	*SD*		*M*	*SD*	
0%	49.6	9.8	0.4	49.5	9.5	0.5
10%	57.6	10.3	2.5	57.1	10.6	2.5
20%	65.0	10.6	9.3	64.3	10.8	8.1
30%	71.5	11.2	24.7	70.4	11.9	21.0
40%	77.4	11.5	43.8	76.0	12.7	36.8
50%	82.0	11.6	58.7	81.5	12.8	53.7
60%	86.6	12.0	73.3	86.0	13.7	66.5
70%	89.8	12.4	80.2	90.0	13.6	77.0

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory-2; MMPI-2-RF = Minnesota Multiphasic Personality Inventory-2-Restructured Form; VRIN = Variable Response Inconsistency; VRIN-r = Variable Response Inconsistency-Revised.

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Table 2
MMPI-2 TRIN and MMPI-2-RF TRIN-r Mean T-Scores and Percentage of Cases With T-Scores ≥ 80 for Varying Degrees of True-Response Insertion—Normative Sample (n = 2,130)

True-insertion percentage	TRIN		Percentage ≥ *T*-score of 80T	TRIN-r		Percentage ≥ *T*-score of 80T
	M	*SD*		*M*	*SD*	
0%	50.2F	9.4	0.6	50.2F	9.3	0.8
10%	58.9T	11.4	6.5	59.5T	11.8	8.0
20%	67.7T	12.8	25.3	69.7T	13.2	29.4
30%	77.3T	14.1	52.4	79.9T	14.5	58.8
40%	87.6T	14.9	78.0	90.1T	15.0	82.3
50%	97.4T	14.4	93.1	101.1T	15.0	95.2
60%	108.3T	14.0	98.9	113.1T	14.7	99.3
70%	119.0T	13.2	99.8	125.5T	13.4	100.0

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory-2; TRIN = True Response Inconsistency; MMPI-2-RF = Minnesota Multiphasic Personality Inventory-2-Restructured Form; TRIN-r = True Response Inconsistency-Revised; T = True; F = False.

Table 3
MMPI-2 TRIN and MMPI-2-RF TRIN-r Mean T-Scores and Percentage of Elevated Cases for Varying Degrees of False-Response Insertion—Normative Sample (n = 2,130)

False-insertion percentage	TRIN		Percentage ≥ *T*-score of 79F	TRIN-r		Percentage ≥ *T*-score of 80F
	M	*SD*		*M*	*SD*	
0%	50.2F	9.4	0.5	50.2F	9.3	0.6
10%	56.4F	10.4	3.1	57.3F	10.8	4.0
20%	62.2F	11.3	11.1	64.7F	12.4	16.5
30%	68.9F	11.6	27.5	72.0F	12.6	36.0
40%	75.3F	11.6	49.5	80.5F	13.6	62.3
50%	81.9F	12.0	70.2	88.5F	13.5	81.1
60%	88.8F	11.5	87.5	96.7F	12.9	94.0
70%	95.5F	10.3	96.9	105.1F	12.2	99.1

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory-2; TRIN = True Response Inconsistency; MMPI-2-RF = Minnesota Multiphasic Personality Inventory-2-Restructured Form; TRIN-r = True Response Inconsistency-Revised; T = True; F = False.

Utility of the MMPI–2-RF (Restructured Form) Validity Scales in Detecting Malingering in a Criminal Forensic Setting: A Known-Groups Design

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The current study examined the utility of the recently released Minnesota Multiphasic Personality Inventory—2 Restructured Form (MMPI–2-RF; Ben-Porath & Tellegen, 2008) validity scales to detect feigned psychopathology in a criminal forensic setting. We used a known-groups design with the Structured Interview of Reported Symptoms (SIRS; Rogers, Bagby, & Dickens, 1992) as the external criterion to determine groups of probable malingering versus nonmalingering. A final sample of 125 criminal defendants, who were administered both the SIRS and the MMPI–2-RF during their evaluations, was examined. The results indicated that the two MMPI–2-RF validity scales specifically designed to detect overreported psychopathology, F-r and F_P-r, best differentiated between the malingering and nonmalingering groups. These scales added incremental predictive utility to one another in this differentiation. Classification accuracy statistics substantiated the recommended cut scores in the MMPI–2-RF manual (Ben-Porath & Tellegen, 2008) in this forensic setting. Implications for these results in terms of forensic assessment and detection of malingering are discussed.

Table 1
Means, Standard Deviations, F Tests, and Cohen's d Effect Size Estimates for Group Differences

	Malingering group (n = 25)		Nonmalingering groups: With intermediates (n = 98)		Nonmalingering groups: Without intermediates (n = 90)		F test		Effect size	
Scale	M	SD	M	SD	M	SD	F_1	F_2	d_1	d_2
F-r	141.92	23.42	82.00	29.54	79.10	27.37	94.57***	116.55***	2.11	2.37
F_P-r	122.38	35.54	68.94	22.44	66.37	19.32	91.04***	113.41***	2.07	2.34
F_S	98.94	25.87	69.17	24.80	67.06	24.02	29.95***	35.29***	1.19	1.30
FBS-r	86.47	14.03	60.97	16.49	59.47	15.88	53.63***	62.98***	1.59	1.74

Note. F-r = Infrequent Responses; F_P-r = Infrequent Psychopathology Responses; F_S = Infrequent Somatic Complaints; FBS-r = Symptom Validity; F_1 = F test between malingering group and nonmalingering group including intermediates; F_2 = F test between malingering group and nonmalingering group excluding intermediates; d_1 = effect size for difference between malingering group and nonmalingering group including intermediates; d_2 = effect size for difference between malingering group and nonmalingering group excluding intermediates.
*** $p < .001$.

INTERPRETING THE MMPI-2-RF

Table 3
Classification Accuracy Statistics for F-R and F_P-R in Differentiating Between Malingering and Nonmalingering Groups

				BR = .15		BR = .30		BR = .50	
Cutoff score	SN	SP	OCC[a]	PPP	NPP	PPP	NPP	PPP	NPP
F-r									
T = 120	**.89**	**.88/.91**	**.88/.91**	**.56/.64**	**.98/.98**	**.76/.81**	**.95/.95**	**.88/.91**	**.89/.89**
T > 115	.93	.82/.84	.84/.86	.47/.51	.98/.98	.68/.72	.96/.96	.83/.86	.92/.92
T > 105	.96	.78/.80	.82/.84	.43/.46	.99/.99	.65/.67	.98/.98	.81/.83	.95/.96
T > 100	.96	.72/.74	.78/.79	.38/.40	.99/.99	.60/.62	.98/.98	.78/.79	.95/.95
F_P-r									
T > 110	**.67**	**.94/.97**	**.88/.90**	**.66/.78**	**.94/.94**	**.82/.90**	**.87/.87**	**.92/.95**	**.74/.74**
T > 100	.74	.90/.92	.86/.88	.56/.63	.95/.95	.76/.80	.89/.89	.88/.90	.78/.78
T > 90	.74	.85/.88	.81/.85	.46/.52	.95/.95	.67/.72	.88/.89	.83/.86	.77/.77
T > 80	.85	.78/.81	.79/.82	.40/.44	.97/.97	.62/.66	.92/.93	.79/.82	.84/.85

Note. Optimal cut score is set in bold font. Values to the left of a slash are when the nonmalingering group with intermediates is used, whereas values to the right of a slash are when the nonmalingering group without intermediates is used. F-r = Infrequent Responses; F_P-r = Infrequent Psychopathology Responses; SN = sensitivity; SP = specificity; OCC = overall correct classification; BR = base rate; PPP = positive predictive power; NPP = negative predictive power; T = T score.
[a] OCC values are based on base rates in the current sample (.22 and .23 for nonmalingering groups with and without intermediates, respectively).

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Examination of the MMPI-2 Restructured Form (MMPI-2-RF) Validity Scales in Civil Forensic Settings: Findings from Simulation and Known Group Samples

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Abstract

The current study examined the effectiveness of the MMPI-2 Restructured Form (MMPI-2-RF; Ben-Porath and Tellegen, 2008) over-reporting indicators in civil forensic settings. The MMPI-2-RF includes three revised MMPI-2 over-reporting validity scales and a new scale to detect over-reported somatic complaints. Participants dissimulated medical and neuropsychological complaints in two simulation samples, and a known-groups sample used symptom validity tests as a response bias criterion. Results indicated large effect sizes for the MMPI-2-RF validity scales, including a Cohen's *d* of .90 for Fs in a head injury simulation sample, 2.31 for FBS-r, 2.01 for F-r, and 1.97 for Fs in a medical simulation sample, and 1.45 for FBS-r and 1.30 for F-r in identifying poor effort on SVTs. Classification results indicated good sensitivity and specificity for the scales across the samples. This study indicates that the MMPI-2-RF over-reporting validity scales are effective at detecting symptom over-reporting in civil forensic settings.

Keywords: MMPI-2-RF; MMPI-2 Restructured Form; Malingering; Forensic evaluation; Medico-legal

INTERPRETING THE MMPI 2 RF

Table 2. Comparison between Head Injury Simulation groups ($n = 23$) and head injury controls ($n = 23$) in Head Injury Simulation sample

	Head Injury Controls		Head Injury Simulation Group		*t*(44)	*p*-value	*d*-value
	Mean *T*-score	*SD*	Mean *T*-score	*SD*			
F-r	66.5	19.9	91.2	40.2	2.64	.011	.78
Fp-r	54.6	9.6	77.3	42.2	2.51	.016	.74
Fs	61.7	23.2	90.8	39.2	3.06	.004	.90
FBS-r	54.2	21.0	64.6	28.0	1.42	.164	.42

Notes: Cohen's *d* calculated for effect size. F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

Table 3. Frequencies in the Head Injury Simulation sample

T-score	F-r			Fp-r			Fs			FBS-r		
	% HIC	% ORG	LR	% HIC	% ORG	LR	% HIC	% ORG	LR	% HIC	% ORG	LR
120	0	26.1			13.0		0	17.4				
110	4.3	43.5	10.1		17.4		4.3	26.1	6.1			
100	4.3	43.5	10.1		21.7		4.3	43.5	10.1	0	0	
90	8.7	43.5	5.0		21.7		17.4	56.5	3.2	8.7	26.1	3.0
80	26.1	56.5	2.2	0	43.5		21.7	60.9	2.8	17.4	43.5	2.5
70	47.8	60.9	1.3	4.3	43.5	10.1	30.4	69.6	2.3	17.4	47.8	2.7
60	56.5	73.9	1.3	13.0	60.9	4.7	39.1	69.6	1.8	39.1	60.9	1.6
50	78.3	73.9	0.9	73.9	73.9	1.0	60.9	73.9	1.2	60.9	69.6	1.1
40	100	100	1.0	100	100	1.0	100	100	1.0	65.2	73.9	1.1
30										100	100	1.0

Notes: Cumulative percentages in descending order. HIC = Head Injury Controls; ORG = Over-Reporting Group; LR = Likelihood ratios; F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

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Table 4. Comparison between over-reporting participants ($n = 32$) and medical controls ($n = 44$) in Medical Simulation sample

	Medical Controls		Medical Simulation Group		$t(74)$	p-value	d-value
	Mean T-score	SD	Mean T-score	SD			
F-r	58.2	13.6	115.7	40.7	8.75	<.001	2.03
Fp-r	49.0	12.2	105.9	48.7	7.45	<.001	1.73
Fs	57.3	12.2	109.9	38.7	8.48	<.001	1.97
FBS-r	53.4	12.5	84.6	14.8	9.95	<.001	2.31

Notes: Cohen's d calculated for effect size. F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

Table 5. Frequencies in Medical Simulation sample

T-score	F-r			Fp-r			Fs			FBS-r		
	% MC	% ORG	LR	% MC	% ORG	LR	% MC	% ORG	LR	% MC	% ORG	LR
120		46.9		0	25.0			37.5				
110		56.3		2.3	37.5	16.3		46.9			0	
100	0	62.5		2.3	43.8	19.0	0	56.3			21.9	
90	4.5	65.6	14.6	2.3	53.1	23.1	2.3	68.8	29.9	0	40.6	
80	9.1	75.0	8.2	2.3	62.5	27.2	6.8	75.0	11.0	4.5	65.6	14.6
70	20.5	87.5	4.3	4.5	71.9	16.0	11.4	75.0	6.6	9.1	87.5	9.6
60	43.2	90.6	2.1	6.8	81.3	12.0	22.7	84.4	3.7	34.1	96.9	2.8
50	65.9	100	1.5	43.2	100	2.3	81.8	100	1.2	50.0	100	2.0
40	100		1.0	100		1.0	100		1.0	86.4		1.2
30										100		1.0

Notes: Cumulative percentages in descending order. MC = Medical Controls; ORG = Over-Reporting Group; LR = Likelihood ratios; F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

Table 6. MMPI-2-RF validity scales and SVT performance in the Personal Injury/Disability sample

	Passed SVT ($n = 93$)		Failed 1 SVT ($n = 21$)		Failed 2–3 SVT ($n = 26$)		ANOVA		Effect size	
	M	SD	M	SD	M	SD	$F(2, 139)$	p-value	η^2	d-value
F-r	62.5_a	16.7	82.6_b	24.2	92.7_b	25.2	28.1	<.001	.29	1.60
Fp-r	50.1_a	9.3	60.3_b	20.4	62.7_b	13.9	13.8	<.001	.17	1.21
Fs	57.2_a	15.6	75.7_b	21.0	81.4_b	23.4	22.9	<.001	.25	1.38
FBS-r	67.5_a	14.7	87.6_b	13.8	87.1_b	9.6	32.5	<.001	.32	1.42

Notes: Means with different subtext are significantly different (Tukey's HSD). Cohen's d calculated for effect size between passed SVT group and failed 2–3 SVT group. SVT = symptom validity test; MMPI-2-RF = Minnesota Multiphasic Personality Inventory-2 Restructured Form; F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

Table 7. Frequencies in Personal Injury/Disability sample

T-score	F-r			Fp-r			Fs			FBS-r		
	% Pass	% Fail	LR	% Pass	% Fail	LR	% Pass	% Fail	LR	% Pass	% Fail	LR
120		19.2						7.7				
110	0	30.8					0	7.7		0	0	
100	3.2	34.6	10.8		0		1.1	15.4	14.0	2.2	3.8	1.7
90	7.5	38.5	5.1	0	3.8		5.4	34.6	6.4	5.4	38.5	7.1
80	17.2	61.5	3.6	1.1	15.4	14.0	8.6	61.5	7.2	25.8	73.1	2.8
70	32.3	73.1	2.3	2.2	23.1	10.5	21.5	65.4	3.0	41.9	96.2	2.3
60	50.5	100	2.0	9.7	38.5	4.0	35.5	73.1	2.1	66.7	100	1.5
50	76.3		1.3	53.8	92.3	1.7	67.7	100	1.5	90.3		1.1
40	100		1.0	100	100	1.0	100		1.0	96.8		1.0
30										100		1.0

Notes: Cumulative percentages in descending order. PASS = Passed all SVT ($n = 93$); FAIL = Failed 2–3 SVT ($n = 26$); LR = Likelihood ratios; F-r = Infrequent Responses; Fp-r = Infrequent Psychopathology Responses; Fs = Infrequent Somatic Responses; FBS-r = Symptom Validity.

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Validity of the MMPI-2-RF (Restructured Form) L–r and K–r Scales in Detecting Underreporting in Clinical and Nonclinical Samples

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In the current investigation, the authors examined the validity of the L–r and K–r scales on the recently developed Minnesota Multiphasic Personality Inventory–2–Restructured Form (MMPI-2-RF; Y. S. Ben-Porath & A. Tellegen, in press) in measuring underreported response bias. Three archival samples previously collected for examining MMPI-2 validity scales were reanalyzed in 2 studies. In Study 1 L–r and K–r significantly differentiated 2 groups of participants (patients with schizophrenia and university students) who had been instructed to underreport on the MMPI-2 from participants who took the test under standard instructions. L–r and K–r also added incremental predictive variance to one another in differentiating these groups. In Study 2 a similar set of outcomes emerged through the use of a differential prevalence design in which L–r and K–r significantly differentiated a group of child custody litigants who were administered the MMPI-2 from university students taking the test under standard instructions.

Table 1
Underreporting Versus Standard Instructions in Patient and Undergraduate Samples

	Patients		Undergraduates					
Scale	SI (n = 43)	UI (n = 44)	SI (n = 46)	UI (n = 48)	F	d_1	d_2	d_3
L–r	51.67_a (10.78)	63.66_b (14.75)	49.71_a (9.57)	57.92_b (15.11)	10.88^{***}	0.93	0.65	1.13
K–r	46.60_a (8.79)	57.81_b (9.97)	46.54_a (9.68)	59.42_b (8.23)	26.35^{***}	1.19	1.44	1.15

Note. Means with different subscripts are significantly different at $p < .05$. Values in parentheses represent standard deviations. SI = standard instructions; UI = underreporting instructions; d_1 = schizophrenia patients SI vs. UI; d_2 = undergraduate SI vs. UI; d_3 = undergraduate SI vs. schizophrenia UI.
$^{***}p < .001$.

Table 3
Underreporting Versus Standard Instructions in Undergraduate and Custody Differential Prevalence Samples

	Undergraduates		Custody			
Scale	SI (n = 67)	UI (n = 65)	DPG (n = 109)	F	d_1	d_2
L–r	49.60_a (9.81)	64.57_b (17.68)	59.69_b (12.11)	22.09^{***}	1.05	0.89
K–r	47.70_a (11.66)	58.77_b (9.87)	56.12_b (10.66)	20.60^{***}	1.02	0.76

Note. Means with different subscripts are significantly different at $p < .05$. Values in parentheses represent standard deviations. SI = standard instructions; UI = underreporting instructions; DPG = differential prevalence group; d_1 = effect size for undergraduates SI vs. UI; d_2 = effect size for undergraduate SI vs. custody DPG.
$^{***}p < .001$.

Malingering

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Malingering

- Cannot be determined by self-report alone
  - External incentive?
  - Factitious disorder?
- When integrated with other sources
  - Collateral information
  - PVTs
  - Other testing
  - Interview
- MMPI-2-RF indications of over-reporting can support the evaluator's conclusions about malingering
- MMPI-2-RF over-reporting indicators have been validated primarily in the context of identifying malingering

Malingering

- Malingering and psychopathology are not mutually exclusive
  - i.e., malingering is not an indication of the absence of psychopathology
- Regardless of malingering, MMPI-2-RF findings of significant over-reporting
  - Raise questions about the validity of scores on the substantive scales
  - And therefore indicate that scores on the substantive scales cannot be relied upon to assess for psychological dysfunction
  - Raise general questions about the validity of the test-taker's self-reported symptoms

For additional information on this chapter, please reference:

Ben-Porath, Y.S. (2012). *Interpreting the MMPI-2-RF*. Minneapolis: University of Minnesota Press.