1982

Extended Report of Interrelationships Between Rorschach and MMPI Scores for Female College Students

Richard H. Dana
Portland State University

Brian Bolton
University of Arkansas

Redundancy Analysis of Rorschach and MMPI Scores for Female College Students*

Richard H. Dana Brian Bolton

University of Arkansas

Introduction

Incremental validity has been defined as an increment in predictive efficiency provided by additional data (Sechrest, 1963). Studies investigating the incremental validity of personality data as interpreted by judges have found that little additional information is generated subsequent to the initial data source. This phenomenon occurs regardless of the particular assessment techniques used; e.g., Rorschach, TAT, MMPI, SCT (Golden, 1964; Kostlan, 1954; Sines, 1959; Winch & More, 1950). Since these studies do not separate test data from clinical judgment, the absence of incremental validity may be an artifact of clinical judgment. Analysis of overlap or redundancy of scorable data contained in separate instruments would clarify this issue.

Only one study has directly compared Rorschach and MMPI scores from college students. Blanton and Landsman (1954) used a group Rorschach and found positive but uniformly low correlations with the MMPI. Psychiatric patients have been compared on the two measures (Williams & Lawrence, 1954). Again few significant intertest correlations were obtained and factor analysis suggested an inverse relationship between the two measures. There have been many separate factor analytic studies of the Rorschach and the MMPI, but these studies cannot provide evidence of incremental validity.

Finally, there have been 49 studies comparing selected contents of the Rorschach and MMPI in a hypothesis-testing format or using case studies as examples. Appendix A lists these studies.

The purposes of the present study were to (a) Examine the interrelationships between Rorschach scores/ratios and MMPI scales; (b) Integrate the results of these analyses with existing literature.

Procedure

Ninety-five female college students were administered individual Rorschachs and completed the MMPI. Klopfer scoring was done for location categories, for major determinant categories, for content, for Popular responses, and for number of additional responses. MMPI records were scored for the standard validity and clinical scales. Table 1 presents the categories scored for both measures. The relationships between the two instruments were examined using correlational analysis, factor analysis, amd redundancy analysis. The latter procedure provides a quantitative index of the overlap of the two domains in terms of the major dimensions of each.

---

*Presentation to the Southwestern Psychological Association meeting in Dallas, TX on April 15, 1982. Grateful acknowledgement is made to Roxanne Wheelis for assistance in data retrieval.

Results

1. Table 1 reports means and standard deviations for the Rorschach and the MMPI.
   A. The Rorschach profile is as expected for college students with a mean R of 26.94, M=Sum C, M (3.49), FM (4.04), F (7.69), W% (32), D% (46), and P (3.84). The mean CF (2.6) exceeds the mean FC (1.55) as expected in this generation. However, the mean cF plus Fc (2.63) and m(1.82) together with the mean number of An (1.29) do suggest the effects of life stress.

   B. The MMPI profile is essentially normal with a range of mean scores on clinical scales from 48.02 (Mf) to 56.70 (Ma). The two highest mean scores Pd (56.06) and Ma (56.70) and the elevated standard deviation for Ma (11.81) are typical of college students. The MMPI corroborates the Rorschach description of a normal sample.

2. Table 2 presents correlations between Rorschach and MMPI variables.*

   A. These Rorschach-MMPI correlations are of very low magnitude. The number of significant correlations (24 of 312) barely exceeds chance expectations.

   B. The significant intercorrelations are concentrated in a pattern that exposes the minimal psychopathology in the sample. Significant correlations (N=14) are found between Rorschach scores and MMPI Hs, D, Hy, and Pa while one or no significant correlations occur with Pd, Mf, Pt, Sc, and Ma (N=3). The patterning of significant correlations (N=7) between MMPI validity scales and Rorschach scores describes the distress that is present in this sample. Elevation on the MMPI F scale is significantly correlated with shading (cF, Fc), achromatic color (all C'), and animal detail (Ad). The L scale elevations (N=2) are associated with very low frequency Rorschach determinants (KF, K and c) and are consequently not readily interpretable. The inverse relationship between numbers of additional Rorschach responses (ADD) and K is consistent with association to elevations in D and Mf. This pattern of Rorschach-MMPI relationships suggests that indications of distress are psychoneurotic rather than psychotic or characterological in nature.

   C. All intercorrelations are of very low magnitude, consistent in expected directions, and occur within a context of paucity. These intercorrelations describe a population that is essentially normal with a minimum of psychopathology.

3. Table 3 presents correlations between Rorschach ratios and MMPI variables.

   A. Three of the four significant intercorrelations occur between H + A/Hd + Ad and Pd, Mf, and Pa. The use of more human and animal detail in Rorschach responses is associated with higher Pd and Pa scores and

---

* Si is ommited from Table 2 due to the small N (N=27). Three significant Si correlations with Rorschach variables were obtained: .48 ($p < .01$) with FK, .46 ($p < .02$) with P_2, -.37 ($p < .06$) with S.

lower Mf scores. The fourth significant Rorschach-MMPI correlation is between M: Sum C and Pd. Lower M scores are associated with elevations on Pd. These findings are consistent with expectations.

4. Several redundancy analyses were completed. No significant Rorschach-MMPI relationships were found. The large number of variables relative to sample size may have prevented detection of any significant relationships.

5. Principal component factor analyses with varimax rotations were done for Rorschach and MMPI data separately. The resultant factors appeared to be sample-specific.

General Comments

1. These findings of few Rorschach-MMPI relationships and no relationships of any substantial magnitude are consistent with the Blanton and Landsman (1954) group Rorschach-MMPI study. Blanton and Landsman found some method variance but the overlap was small and it was concluded that the Rorschach and MMPI had different functions.

2. The present findings are also consistent with previous studies indicating that the intercorrelations between tests are very low. It is concluded that the Rorschach and the MMPI do not measure the same variable in a normal population of college students. Since these tests are independent sources of information, they have the potential for providing incremental validity. In the absence of additional information, however, a strong conclusion is not possible from this study.

References

Blanton, R., & Landsman, T. The retest reliability of the Group Rorschach and some relationships to the MMPI. Journal of Consulting Psychology, 1952, 16, 265-267.

Golden, M. Some effects of combining psychological tests on clinical inferences. Journal of Consulting Psychology, 1964, 28, 440-446.

Kostlan, A. A method for the empirical study of psychodiagnosis. Journal of Consulting Psychology, 1954, 18, 83-88.

Sechrist, L. B. Incremental validity: A recommendation. Educational and Psychological Measurement, 1963, 23, 153-158.

Sines, L. K. The relative contribution of four kinds of data to accuracy in personality assessment. Journal of Consulting Psychology, 1959, 23, 483-492.

Williams, H. L., & Lawrence, J. F. Comparison of the Rorschach and MMPI by means of factor analysis. Journal of Consulting Psychology, 1954, 18, 193-197.

Winch, R. F., & More, D. M. Does the TAT add information to interview? Statistical analysis of the increments. Journal of Clinical Psychology, 1950, 12, 316-321.

Table 1

Rorschach and MMPI Variables with Means and Standard Deviations

for 94 Female College Students

Rorschach	Mean	S.D.
R	26.94	11.64
M	3.49	2.44
FM	4.04	2.56
m	1.82	2.09
KF, K	0.39	0.66
FK	0.76	1.18
F	7.69	5.11
cF, Fc	2.63	2.56
c	0.04	0.20
C', C'F, FC'	1.19	1.47
F/C, F↔C, FC	1.55	1.75
C/F, C↔F, CF	2.60	1.94
Cn, Cdes, Csym, C	0.73	1.16
Sum C	3.66	2.91
P	3.84	1.76
H	3.54	2.62
A	9.03	3.77
W(W)	8.79	4.47
D	12.35	7.27
Dd(dr, de, di, dd)	1.06	1.84
S	1.33	2.17
Hd	0.98	1.76
Ad	0.82	1.26
Add	1.64	2.55
Obj	2.80	2.47
An	1.29	1.43

MMPI	Mean	S.D.
L	46.83	5.63
F	51.30	6.07
K	56.23	6.79
Hs	50.01	6.87
D	49.87	8.61
Hy	54.56	6.76
Pd	56.06	8.92
Mf	48.02	8.96
Pa	55.84	8.86
Pt	55.50	8.46
Sc	55.81	8.14
Ma	56.70	11.81
Si (N=27)	49.93	9.11

Rorschach Ratios

M : Sum C

H + A : Hd + Ad

FM + m : Fc + c + C'

F/R

$$\frac{FK + F + Fc}{R}$$

$$\frac{A + Ad}{R}$$

Table 2

Correlations Between Rorschach and MMPI Variables for 94 Female College Students[1]

Rorschach	MMPI											
	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma
R	-00	16	09	19	-04	20*	13	02	09	-05	06	-00
M	-04	-00	12	09	-18	08	04	-09	-10	-04	-02	08
FM	17	03	18	20	-02	27**	08	00	19	-06	-04	00
m	-08	-05	05	08	06	09	07	-08	-09	-04	-07	-18
KF, K	-21*	-06	00	-05	-15	-06	11	03	-08	-05	-03	10
FK	-05	-03	-16	-06	13	-06	-09	-06	-11	05	-01	17
F	-03	11	-01	-00	-12	08	-02	16	-02	-13	-02	07
cF, Fc	02	28**	02	19	20*	16	19	01	23*	07	15	-03
c	33**	13	-06	20*	11	14	-04	01	26**	03	07	02
all C'	14	27**	-02	18	06	15	11	-05	23*	20*	30**	03
all FC	-18	11	02	05	-01	-00	13	-06	08	-04	11	01
all CF	05	-04	18	26**	01	18	14	-02	09	-02	-02	-12
all C	05	17	09	06	-14	-05	13	07	-04	09	09	15
Sum C	11	05	16	28**	00	12	12	00	02	07	05	-11
P	-00	-09	10	08	-07	20*	14	18	-09	15	-17	12
H	-07	02	08	10	-15	14	05	-10	-08	-02	02	10
A	01	06	08	05	-13	13	14	07	10	-19	-02	05
W	-08	12	04	06	-05	04	11	-05	02	-05	15	08
D	-02	06	14	15	-08	17	18	09	-03	-05	02	02
d	-12	13	-01	06	08	-05	-04	16	07	-03	00	-01
S	07	-06	-00	-02	-09	03	-07	15	-01	-11	-12	04
Hd	09	04	-12	-04	-11	02	-09	15	-02	-06	-01	06
Ad	04	22*	-09	08	24**	06	-06	22*	07	04	-03	-16
Add	-02	11	-25**	-02	-01	-03	12	-12	22*	06	-03	14
Obj	-01	-01	11	11	02	00	02	12	-10	-02	-04	-07
An	-03	23*	09	15	21*	13	15	-11	21*	14	07	-14

* $<.05$

** $<.01$

[1] Decimals are omitted.

Table 3

Correlations Between Rorschach Ratios and MMPI Variables for 94 Female College Students[1]

Rorschach	N	MMPI											
		L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma
M : Sum C	87	-08	01	-03	-15	-03	-07	-25*	09	01	-12	-13	-05
$\frac{H + A}{Hd + Ad}$	54	-07	05	08	19	12	25	38**	-32*	27*	20	16	06
$\frac{FM + m}{Fc + c + C'}$	81	-14	-15	-05	-12	-09	-05	-03	-01	-20	-05	-06	18
F/R	94	03	-00	-11	-15	-07	-05	-19	19	-11	-14	-11	05
$\frac{FK + F + Fc}{R}$	94	09	08	-16	-12	08	-03	-14	16	-06	-09	-06	-01
$\frac{A + Ad}{R}$	94	03	-06	-02	-09	01	-10	-08	20	04	-14	-13	00

* <.05

** <.01

[1] Decimals are omitted.

Appendix A

Abram, H.S., Meixel, S. A., Webb, W. W., & Scott, H. W. Psychological adaptation to jejunioleal bypass for morbid obesity. Journal of Nervous and Mental Disease, 1976, 162(3), 151-157.

Adams, H. B., & Cooper, G. D. Three measures of ego strength and prognosis for psychotherapy. Journal of Clinical Psychology, 1962, 18, 490-494.

Adams, H. B., Cooper, G. D., & Carerra, R. N. The Rorschach and the MMPI: A concurrent validity study. Journal of Projective Techniques, 1963, 27, 23-24.

Altus, W. D. Some correlates of the group Rorschach and the schizophrenia scale of the group MMPI among two groups of "normal" college students. Journal of Consulting Psychology, 1948, 12, 375-378.

Blake, R. R. & Wilson, G. P., Jr. Perceptual selectivity in Rorschach determinants as a function of depressive tendencies. Journal of Abnormal and Social Psychology, 1950, 45, 459-472.

Carnes, G. D. & Bates, R. E. Rorschach anatomy response correlates in rehabilitation failure subjects. Journal of Personality Assessment, 1971, 35(6), 527-537.

Clark, J. H. Some MMPI correlates of color responses in the group Rorschach. Journal of Consulting Psychology, 1948, 12, 384-386.

Cole, S., Williams, R. L., & Moore, C. H. Parental interpretation of Rorschach cards IV and VII among adjusted and maladjusted subjects. Journal of General Psychology, 1969, 81(1), 131-135.

Cutter, F. Rorschach sex responses and overt deviations. Journal of Clinical Psychology, 1957, 13, 83-86.

Dana, R. H. Objective TAT scores and personality characteristics: Perceptual Organization (PO). Perceptual and Motor Skills, 1960, 10, 154.

Dana, R. H. & Hopewell, E. Repression and psychopathology: A cross-validation failure. Psychological Reports, 1966, 19(2), 626.

Endicott, N. A. & Endicott, J. Objective measures of somatic preoccupation. Journal of Nervous and Mental Disease, 1963, 137, 427-437.

Endicott, N. A. & Endicott, J. "Improvement" in untreated psychiatric patients. Archives of General Psychiatry, 1963, 9, 575-585.

Endicott, N. A. & Endicott, J. Prediction of improvement in treated and untreated patients using the Rorschach prognostic rating scale. Journal of Consulting Psychology, 1964, 28, 342-348.

Endicott, N. A. & Endicott, J. The relationship between Rorschach Flexor and Extensor M responses and the MMPI. Journal of Clinical Psychology, 1964, 20, 388-389.

Forsyth, R. P., Jr. The influence of color, shading, and Welsh anxiety level on Elizur Rorschach content test analyses of anxiety and hostility. Journal of Projective Techniques, 1959, 23, 207-213.

Geist, H. Psychological aspects of rheumatoid arthritis. Proceedings of the 77th Annual Convention of the American Psychological Association, 1969, 4(Pt. 2), 769-770.

Geist, H. Emotional aspects of dermatitis. Proceedings of the Annual Convention of the American Psychological Association. 1971, 6(Pt. 2), 627-628.

Goldfried, M. R. Rorschach development level and the MMPI as measures of severity of psychological disturbance. Journal of Projective Techniques, 1962, 26, 187-192.

Greene, R. S. Study of structural analysis: Comparing differential diagnoses based on psychiatric evaluation, the MMPI, and structural analysis of the hand test and Rorschach. Perceptual and Motor Skills, 1978, 46(2), 503-511.

Harris, J. G., Jr. Rorschach and MMPI responses in severe airsickness. USN SAM Research Reports, 1963, Proj. MR005. 13-5001, Subtask 1, Rep. No. 22, ii, 13 pp.

Jakobson, T., Blumenthal, M., Hagman, H., & Heikkinen, E. The Diurnal Variation of urinary and plasma 17-Hydroxy-Corticosteroid (17-OHCS) levels and the plasma 17-OHCS response to Lysine-8-Vasopressin in depressive patients. Journal of Psychosomatic Research, 1969, 13(4), 363-375.

Jurjevich, R. M. Hostility and anxiety on the Rorschach Content Test, Hostility Index, and the MMPI. Psychological Reports, 1967, 21(1), 128.

Kuha, S., Moilanen, P., & Kampman, R. The effect of social class on psychiatric psychological evaluations in patients with pulmonary tuberculosis. ACTA Psychiatrica Scandinavica, 1975, 51(4), 249-256.

Kunce, J. T. & Tamkin, A. S. Rorschach movement and color responses and MMPI social extraversion and thinking introversion personality types. Journal of Personality Assessment, 1981, 45(1), 5-10.

Lamb, H. W. A multitest approach to the analysis of personality patterns of delinquents. Pennsylvania Psychiatric Quarterly, 1966, 6(2), 26-40.

Leger, J., Ranty, T., Blanchinet, J., & Vallat, J. N. A case of feminine transexualism. Annales Medico-Psychologiques, 1969, 1(1), 164-172.

Lowe, C. M. Prediction of posthospital work adjustment by the use of psychological tests. Journal of Counseling Psychology, 1967, 14(3), 248-252.

Mann, N. A. The relationship between defense preference and response to free association. Journal of Projective Techniques and Personality Assessment, 1967, 31(4), 54-61.

Palmer, J. O. Attitudinal correlates of Rorschach's experience balance. Journal of Projective Techniques, 1956, 20, 207-211.

Pierce, R. M. Comment on the prediction of posthospital work adjustment with psychological tests. Journal of Counseling Psychology, 1968, 15(4), 386-387.

Rice, D. G. Rorschach responses and aggressive characteristics of MMPI F>16 scorers. Journal of Projective Techniques and Personality Assessment, 1968, 32(3), 253-261.

Rosen, E. MMPI and Rorschach correlates of the Rorschach white space response. Journal of Clinical Psychology, 1952, 8, 283-288.

Sappenfield, B. R. Perceptual conformity and ego strength. Percptual and Motor skills, 1965, 20(1), 209-210.

Schwartz, S. & Giacoman, S. Convergent and discriminant validity of three measures of adjustment and three measures of social desirability. Journal of Consulting and Clinical Psychology, 1972, 39(2), 239-242.

Sisk, H. L. A reply to Winfield's study of the Multiple Choice Rorschach. Journal of Applied Psychology, 1947, 31, 446-448.

Smith, W. H. & Coyle, F. A., Jr. MMPI and Rorschach form level scores in a student population. Journal of Psychology, 1969, 73(1), 3-7.

Strickland, J. F., & Keuthe, J. L. An experimental investigation of the relationship between psychasthenia and ego-strength. Journal of General Psychology, 1959, 60, 245-252.

Tamkin, A. S. An evaluation of the construct validity of Barron's Ego Strength Scale. Journal of Clinical Psychology, 1957, 13, 156-158.

Tamkin, A. S. Rorschach card rejection by psychiatric patients. Journal of Consulting Psychology, 1958, 22, 441-444.

Tamkin, A. S. & Sonkin, N. Use of psychological tests in differential diagnosis. Psychological Reports, 1969, 24(2), 590.

Taulbee, E. S. Relationship between certain personality variables and continuation in psychotherapy. Journal of Consulting Psychology, 1958, 22, 83-89.

Taulbee, E. S. The relationship between Rorschach flexor and extensor M responses and the MMPI and psychotherapy. Journal of Projective Techniques, 1961, 25, 477-479.

Thompson, G. M. MMPI correlates of certain movement responses in the group Rorschachs of two college samples. Journal of Consulting Psychology, 1948, 12, 379-383.

Wildman, R. W. & Wildman, R. W., Jr. An investigation into the comparative validity of several diagnostic tests and test batteries. Journal of Clinical Psychology, 1975, 31(3), 455-458.

Winter, W. D., & Salcines, R. A. The validity of the objective Rorschach and the MMPI. Journal of Consulting Psychology, 1958, 22, 199-202.

Wolman, R. & Kepecs, J. Ego measurements of patients and staff on a medical ward. Comprehensive Psychiatry, 1969, 10)4), 334-340.

Woo, S. J. M., Rogal, R. A., & Zimmerman, I. L. Influence of MMPI and Rorschach indices of hypochondriasis on the rehabilitation of brain-injured adults. Proceedings of the Annual Convention of the American Psychological Association, 1970, 5(Pt. 2), 721-722.

Yamihiro, R. S. & Griffith, R. M. Validity of two indices of sexual deviancy. Journal of Clinical Psychology, 1960, 16, 21-24.