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Relationships between Two Projective Tests
and Other Variables in a Group of High School Boys
by
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The data presented in this paper were gathered as part of the Career Pattern Study of the Horace Mann-Lincoln Institute, Teachers College, Columbia University. I am indebted to Donald E. Super, project director, for use of the material, and to William Dubin, John Kinnane, and Patricia Gross for assistance in various aspects of data analysis.

The Career Pattern Study is studying various aspects of the vocational behavior and the vocational adjustment of a group of subjects who are being observed periodically over a 20-year period, from rather early adolescence into adulthood. An important aspect of the study is research on a variety of factors that may be related to the careers of these subjects.

The material I am reporting this afternoon is based on data gathered when the subjects were in the ninth grade of Middletown High School, Middletown, New York. The subjects are 105 boys, with a mean age of 14 years 4 months, and an average IQ, as determined by the Otis Gamma, of 102.5. They are of predominantly middle-class and upper-lower class socioeconomic status. The community in which they live is about 65 miles northwest of New York City, and has a population of somewhat over 22,000. Middletown High School is the only high school in the community, and serves the surrounding rural area as well as residents of Middletown itself.

When the boys were in the ninth grade, information about them was gathered by the use of a variety of psychological tests and questionnaires,

and by interviews with them and their parents. Psychological adjustment was assessed by an adaptation of the High School Form of the Rotter Incomplete Sentences Blank and by the Thematic Apperception Test. In this context, psychological adjustment is operationally defined as freedom from conflict as indicated by scores on these two projective tests.

Thematic Apperception Test and Incomplete Sentences Blank scores were included in a 29 variable matrix of correlation coefficients. An examination of the correlation between the two projective tests and a comparison of their correlations with other variables in the matrix should contribute to further understanding of both instruments. Accordingly, two problems were investigated:

- 1) What is the relationship between scores obtained by the same subjects on two different projective tests requiring verbal tasks?
- 2) To what other variables are the scores on each of these two tests significantly related?

The Incomplete Sentences Blank was administered in a group testing situation. The 40 item high school form developed by Rotter and others was used in a slightly altered version. Preliminary scoring criteria for high school boys had been made available to the Career Pattern Study by Dr. Rotter and these criteria were used in scoring the test. The rank order correlation between two judges in scoring a sample of the tests given at the twelfth grade level was .99. Internal consistency of the test is indicated by a split-half coefficient of .80, corrected to .89 by the Spearman-Brown formula, using 50 of the ninth-grade protocols. The tests were divided into halves on the basis of subjective judgment of the equivalence of the different stems.

The Thematic Apperception Test was administered individually by several different examiners and the responses were tape-recorded. Fifteen cards were used; scoring was prorated if less than 15 cards had been employed. The method of scoring used in this study was not based on a need-press analysis. Instead, a new method was devised which yielded a total score for the 15 cards, presumed indicative of adjustment. Two approaches to the scoring of projective tests were particularly influential in the development of the scoring procedure used: the method of rating TAT records for adjustment reported by Dymond in Chapter 8 of Psychotherapy and Personality Change, and Rotter's method of scoring the Incomplete Sentences Blank in terms of conflict, neutral, or positive responses, with scoring criteria for each step of a 7-point scale.

In the Career Pattern Study procedure of scoring the TAT, a 5-point scale, from severe maladjustment through neutral to well adjusted was used. Placement on the scale was determined primarily by the overall quality of the affect in the story. For example, refusals, and stories of violence, severe guilt, or strong fear were considered indicative of severe maladjustment and were given a score of 5. Stories displaying milder negative emotions were scored 4; descriptions or stories in which neither positive nor negative affect was very apparent were considered neutral and given a score of 3. Stories rated 2, adequate adjustment, were more positive, displaying minimum conflict, adequately handled. Those rated 1, well adjusted, were judged to be the most positive, with good interpersonal relationships and a happy outcome. Each picture was scored separately and the results summed. Twenty-five cases were independently scored by two judges; the rank-order correlation of the two sets of scores was .78.

Because high scores on both the Incomplete Sentences Blank and this method of scoring the TAT are negative, that is, indicative of maladjustment, signs were reversed when necessary in reporting coefficients of correlation, so that relationships to adjustment rather than to maladjustment may be reported, and so that all relationships may be reported in a consistent manner.

Results

The Incomplete Sentences Blank and the TAT scores were found to be unrelated to each other: there was a slight but non-significant negative correlation of $-.17$ between them. They were not significantly related to the same variables within the matrix of correlation coefficients. All of the coefficients were small in size, however.

Using a two-tailed test, the Incomplete Sentences Blank had significant positive correlations at the $.01$ level or better with socioeconomic status as assessed by parental occupational level rated on the Hamburger revision of the Warner Scale (a coefficient of $.26$) and with self-perceived resemblance to the father in attitudes and behavior as evaluated by the Resemblance sub-test of the Henderson Father Identification Test (a coefficient of $.28$). The ISB was positively correlated at the $.05$ level or better with the Total score of the Henderson Father Identification Test ($.21$), and with Urban rather than Rural residence ($.22$). It was negatively correlated with age within one school grade ($-.20$).

Holding parental occupational level constant, partial correlations were computed between the Incomplete Sentences Blank and the two Father Identification Test scores, Urban versus Rural residence, and age. The Father Identification (Resemblance) correlation with the Incomplete Sentences Blank remained significant at the $.01$ level, but the relationship between Father Identification Total score and the ISB was sufficiently lowered by the partialling out of parental occupational level as to become

non-significant. The partial correlation between ISB and age with occupational level held constant was also non-significant. Urban rather than rural residence was not appreciably affected by the partialing out of parental occupational level.

The TAT adjustment score was not significantly related to any of these variables. Using a two-tailed test, the TAT had significant positive correlations at better than the .01 level with Peer Acceptance as measured by a Guess Who Test (a coefficient of .32) and with Participation in School Activities (a coefficient of .31). The correlation between the TAT and Participation in Non-School Activities was .21, significant at the .04 level with a two-tailed test.

Because Cultural Stimulation (a Biographical Inventory scale relevant to socioeconomic status) was significantly correlated with Participation in School Activities and Participation in Non-School Activities and barely missed significance in correlation with the TAT using a two-tailed test, some partial correlations were computed, holding Cultural Stimulation constant. The first-order partial correlations between the TAT and Peer Acceptance and between the TAT and Participation in School Activities with Cultural Stimulation held constant were significant beyond the .01 level. However, the correlation between the TAT and Participation in Non-School Activities became non-significant when Cultural Stimulation was partialled out.

These data suggest that the Incomplete Sentences Blank and the Thematic Apperception Test as scored by the Career Pattern Study procedure assess different aspects of adjustment: in this sample the ISB is related to self-perceived resemblance to the father and the TAT is related to acceptance by peers and participation in activities with others. Both instruments appear to have some relationship to socioeconomic status, but to different aspects of status.

Relationships between adjustment as assessed by the ISB and the TAT and ability, level of vocational aspiration, and academic achievement were explored. Using a two-tailed test, neither of these two projective tests was significantly correlated with intelligence as measured by Otis IQ, to level of the boys' expressed vocational aspirations as assessed by the Hamburger revision of the Warner scale, or to academic achievement as shown by the average of grades obtained in three required courses (English, general science, and social studies).

To summarize: This study of a group of adolescent boys has investigated the relationship between the Incomplete Sentences Blank and the Thematic Apperception Test as scored by a new procedure, and the relationships between both tests and other variables. Results tentatively suggest that for this sample the ISB reflects aspects of adjustment related primarily to the father and the family socioeconomic status while the TAT reflects aspects of adjustment related primarily to peer relationships. Neither test is appreciably related to intellectual ability, academic achievement, or vocational aspiration level in this group of ninth-graders. Interpretation of the findings is limited by the small size of the correlation coefficients, and by the fact that this study is a first attempt to validate a new procedure for scoring the Thematic Apperception Test. However, the results indicate that it is important to use a variety of approaches in attempting to assess psychological adjustment.