AN INVESTIGATION OF THE CONSTRUCT VALIDITY
OF SOME RORSCHACH VARIABLES

DISSERTATION

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By

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Introduction

During the course of gaining experience in the administration, scoring and interpretation of Rorschach's Ink Blot Test, the writer has been increasingly impressed by the number and variety of predictions that can be made from the test, even in a completely "blind" situation; that is, the only data available to the interpreter are the Rorschach protocol, and the age and sex of the subject.

Nevertheless, certain growing doubts have crept into the awareness of the writer. For example, to what degree are predictions upheld because the clinician "knows what to look for?" An elementary psychology instructor showed his class an ink blot he had made and asked them to write their responses and to hand them in. At the following class meeting, he distributed "confidential interpretations" to the class, all of which were identical and comprised of the platitudinous statements of a type used by fortune tellers and the like. A majority of the class felt that the descriptions were quite accurate descriptions of their own personalities.

Is it possible then that the Rorschach expert may be hoodwinking himself and his colleagues without realizing that he does so?

To consider the problem from a different level, most psychologists receive their training within one or more of the three major systems: those of Klopfer, Beck, and Hertz. Each system is based
upon some attempt at objectification. Particular scoring symbols are assigned to what the subject sees, where he sees it and how it is seen. The examiner draws his interpretations from an inspection of scores within the categories and from an inspection of the verbal responses of the subject, and it is generally accepted that experience with the test is essential to the derivation of accurate and useful interpretations. Could it be, however, that the source of the interpretations is the actual verbal response record and that the scoring of responses is a spurious attempt to make scientific an artistic and subjective procedure?

It may be seen that in either of the two questions above the essential problems are those of (a) the quality of communication between the Rorschach worker and others and (b) validity. These are not discrete in that the problems of communication can only be solved, for scientific purposes, by the accumulation of validity data on the test.

In a recent publication (25), The Joint Test Standards Committee of the American Psychological Association, American Educational Research Association and National Council on Measurements Used in Education, has divided the general concept of validity into four subgroups, to clarify the meanings of the term as applied to various types of psychological tests.

Content validity is evaluated by showing how good a sample a test is of the class of situations or events about which conclusions are
to be drawn.

Predictive validity is evaluated by showing how well predictions made from a test are supported by evidence gathered at a later time.

Concurrent validity is evaluated by showing the degree to which test scores correspond to measures of concurrent criterion performance or status.

Construct validity is evaluated by investigating what psychological qualities a test measures. The committee points out that in construct validity it is the theory underlying the test that is investigated and that this type of validity is particularly applicable to projective tests.

In the absence of clear-cut criteria of personality variables; indeed, in the absence of general agreement as to what constitutes personality, the concept of construct validity provides a point from which to draw inferences about personality variables as a means of integrating data from projective testing and other kinds of observations.
I. STATEMENT OF THE PROBLEM

The problem to be considered here is whether inferences drawn from some of the scoreable Rorschach categories are related to observable behavior, when these inferences are evaluated apart from inferences drawn from an evaluation of the verbal responses of the subject, and apart from the possibly contaminatory effects of evaluating the record in a case conference.

Of the frequently used systems of Rorschach interpretation, the writer is most familiar with those of Beck (4) and Klopfer (16) and has worked primarily with Klopfer's system. While Beck's system provides a more precise scoring for the location of responses, i.e., where the subject's percept is found on the card, Klopfer provides a more rigorous set of criteria for the scoring of the determinants (how the subject sees what he sees) and a finer discrimination between varieties of determinants. This study does not deal with the merits of the two systems.

Both authorities emphasize that the most important step in the administration of Rorschach's test is that which comes after the initial presentation of the sequence of cards. After the subject has been permitted to respond freely to each of the ten cards, without limiting or urging (limiting the subject's responses if they exceed ten, or urging if the subject gives one or no response, is considered permissible only
on the first card) and with the administrator refraining from comment-
ing on the responses, the cards are again presented to the subject and
at this time the "where" and "how" necessary to score the responses is
obtained through careful discussion with the subject, particular care
being taken to avoid leading questions.

Clearly, any attempted evaluation of a Rorschach system in which
the rules of administration and inquiry peculiar to the system are not
scrupulously followed would not constitute an adequate test of the sys-
tem, and one may wonder how many of the numerous Rorschach studies
may be questioned for this reason. In this investigation particular
care has been taken to follow Klopfer's rules of administration (16,
Ch. III)

Within Klopfer's system, the location scores are of five types:
the whole response, (W); the large usual detail response, (D); the
small usual detail response, (d); the unusual detail response, (Dd) of
which there are a number of sub-categories; and the space response,
(S).

For a given record the percentages of the location scores with
respect to the total number of responses are computed (S is considered
with Dd for this purpose) and these are compared to Klopfer's table of
usual variabilities of the categories, inferences being made about the
behavior of the subject according to whether his percentages fall above,
below or within the expected range (16, Ch. VIII). From these inferences testable null hypotheses have been derived concerning the relationships between the location scores and observable behavior.

W: To be scored W, three-quarters or more of the blot area must be used by the subject as his response; responses using less than the entire blot are scored as "cut-off W" and tabulated in computing W%.

According to Klopfer (16, p. 259), the traditional meaning of W as an emphasis on the abstract forms of thinking and the higher forms of mental activity cannot be accepted unqualifiedly. He points out that a high number of simple or frequently used (popular) W's may represent either a pathological condition or what he calls a "quality ambition". In the behavior of an individual this may be represented by what is termed "overintellectualization;" what may be clear and reasonable thinking by the individual is hidden under a gloss of high sounding verbiage. From his statement we may set up the following hypothesis:

1. There is no relationship between W% and behavior seen as overintellectualization.

The superior W construction, i.e., one carefully and logically built up from the configurations of the blot, may suggest that the individual has organizational ability, so:
2. There is no relationship between the amount of superior W and behavior seen as related to organizational ability.

D: To be scored D, the subject's response must involve an area of the blot commonly responded to by individuals taking the test. D as scored here is from Klopfer's table of large usual details (16, pp. 95-99). D is commonly interpreted as a measure of the individual's response to the common practical problems of everyday living. An overemphasis on D might be interpreted as overpracticality; conversely, a low percentage of D responses may point to a lack of recognition of the problems of everyday life (16, pp. 260-262).

3. There is no relationship between D% and behavior seen as involving practicality.

d: To be scored d, the subject must respond to a small detail of the blot commonly used by others taking the test. The criterion for d is Klopfer's table of small usual details (16, pp. 95-99).

The d response is interpreted as related to a critical attitude directed toward the general experience of the individual. A person with a high percentage of d responses might be critical of authority figures or the social structure (16, pp. 260-262).

4. There is no relationship between d% and behavior seen as involving criticism.
Dd: The unusual detail response is scored when the subject’s response is to an unusual blot area (dr), an edge detail (de), a tiny detail (dd), or a small internal detail (di). These responses are infrequently used by the normal subject but when present may suggest some over-concern for detail (16, pp. 262-264).

5. There is no relationship between Dd% and behavior seen as related to an over-concern for details.

The Dd responses also may be interpreted to indicate either rich artistic responsiveness or an intuitive sense of the unusual (16, p. 263).

6. There is no relationship between Dd% and behavior seen as pertaining to artistic responses or a sense of the unusual.

S: The white space response is scored when the subject reverses the figure-ground configuration and responds to the white space alone. While S is included in the computation of the Dd%, it has a separate interpretive significance, commonly being related to oppositional tendencies, intellectual aggressiveness and to a tendency to use an unusual approach (16, pp. 265-266).

7. There is no relationship between the use of the S response and behavior seen as related to oppositional tendencies, intellectual aggressiveness, or the use of an unusual approach.
The above hypothesis is a test of $S$ in the so called "extra-tensive" or outgoing person, where the oppositional tendencies are directed toward the environment. When the oppositional tendencies are directed toward the self, self-critical, or self-destructive behavior may be deduced as an interpretation (16, p. 265).

8. There is no relationship between the number of $S$ responses and behavior seen as self-critical or self-destructive.

As mentioned above, the aspects of the blot that determine how the subject sees his percept are called the "determinants" and within Klopfer's system the broad categories of movement, shading, color and form are broken into thirteen subcategories.

Regardless of the system of categories used, all systems of interpretation from the determinants, Klopfer included, insist that interpretation involve a consideration of the interrelationships between the determinants. However, this demand makes the formulation of testable hypotheses exceedingly complex so it will be disregarded with full knowledge that the more easily tested hypotheses involving single determinants taken, in a sense, "out of context" may not prove entirely meaningful to a Rorschach expert. We may hope that the purported interpretive significance of most of the determinants is strong enough to override the loss of sensitivity brought about by this compromise.
Of Klopfer's thirteen subcategories, the first to be considered is the human movement determinant or M. M is scored for percepts involving humans in action or animals in human-like action, the essence of the response being kinesthesia.

In the Rorschach tradition, M is seen as being related to the individual's creative and intellectual capacities and to mature fantasy activity. M is also considered to be related to the controls the individual may place upon his inner promptings (16, p. 277).

9. There is no relationship between the number of M responses and behavior seen as related to creative and intellectual capacities and maturity.

A large number of M responses, particularly those scored on animal percepts, such as cartoon figures and the like may be suggestive of withdrawal into a world of fantasy (16, p. 279).

10. There is no relationship between the number of M responses and behavior seen as indicative of excessive fantasy.

FM: The animal movement determinant is scored for animals in action. Klopfer sees FM as related to M but as an indicator of less mature fantasy, and related to the degree to which the individual accepts his biological urges (16, pp. 278-280).

An individual using many FM responses (theoretically many more than M) might be described as immature and might be expected
to make general use of less mature adjutantive techniques. An absence of FM might point toward difficulties with sexual adjustment and perhaps indirectly toward obsessive preoccupations.

11. **There is no relationship between the number of FM responses and behavior seen as related to immaturity and acceptance of biological urges.**

_**m:**_ The minor movement determinant is scored when the subject's percept involves natural forces, tensions, or inanimate movement. This determinant is also scored as an additional response where the subject perceives facial expressions.

For Klopfer, **m** is related to an "awareness of inner tension" and it occurs when the individual is at odds with his inner promptings. The determinant is also interpreted to indicate a kind of potential for better self-understanding (16, pp. 279-280).

12. **There is no relationship between the number of m responses and behavior seen as related to inner tension.**

_**k:**_ This determinant is scored when the subject reacts strongly to the shading as an impression of depth but is unable to form a definite concept. The subject "tones down" the shading into "topographical maps" or "X-ray pictures."

The **k** response is interpreted by Klopfer as an indication of an attempt to deal with anxiety by intellectual means and may
indicate feelings of intellectual inadequacy (16, p. 242).

13. **There is no relationship between the number of K responses and behavior seen as related to an attempt at handling anxiety by intellectual means.**

**K:** The diffusion determinant is scored when the percept of the subject employs the shading element of the blot as diffusion.

The K determinant is interpreted to be related to a "free floating" or unsystematized anxiety and is said by Klopfer to reflect the "haziness and fogginess" of the inner life of the subject (16, p. 241).

14. **There is no relationship between the number of K responses and behavior seen as related to unsystematized anxiety.**

**FK:** The vista determinant is scored for the use of shading as a three-dimensional effect.

According to Klopfer, the FK responses are related to the mechanism which supplements the individual's relationship with the individual's own self. This mechanism is described as a form of introspection which serves as a refined control of inner impulses (16, p. 237).

15. **There is no relationship between the number of FK responses and behavior seen as related to control or self-consciousness.**
**F:** The form determinant is scored when the shape only is used by the subject as his percept.

The form determinant is interpreted to be related to the flexibility or rigidity of the controls that the individual imposes upon the functioning of his personality (16, p. 203).

The individual with a low ratio of *F* responses to the total number of his responses might be described as prone to being easily affected and influenced by his own impulses and external happenings. The individual with a high percentage of *F* responses might be described as rigid, constricted and liable to "ruling his emotions with an iron fist."

16. **There is no relationship between** F% **and behavior seen as related to the individual's control.**

**Fc:** The differentiated texture determinant is scored when the subject utilizes the shading element of the blot to depict surface appearance, texture or transparency, and where form is essential to the response.

The *Fc* determinant as a fusing of *F*, indicating control, and texture, seen as related to sensation, is interpreted to be an indicator of social sensitivity and tact, as well as being related to the control of impulses directed toward the external reality (16, p. 238).
17. There is no relationship between the number of Fc responses and behavior seen as related to social sensitivity or control.

C: The undifferentiated texture determinant is scored when the subject uses the shading as raw texture, minimizing or ignoring the form of the blot or area.

The c response is seen as related to sensuality or poorly controlled needs for contact. Subjects using this determinant might be seen as difficult to relate to because of their poorly controlled contact needs (16, p. 286).

18. There is no relationship between the number of c responses and behavior seen as related to poorly controlled contact needs or sensuality.

C': The achromatic color determinant is scored when the subject's percept involves the white, black or grey of the card as color.

In small amounts C' is seen as being related to artistic sensibilities; in larger amounts it may point toward severe mood swings and depression (16, pp. 243, 396).

19. There is no relationship between the number of C' responses and behavior seen as involving artistic sensibilities.
20. There is no relationship between the number of C responses and behavior seen as related to emotional depression or mood swings.

FC: The form-color determinant is scored for the use of both the form and color of the blot to form a percept in which the form element is of most importance.

In the Rorschach tradition, the FC determinant is seen as related to the individual's control of his external experience and particularly to the degree of emotional adjustment to outer reality (16, p. 282).

21. There is no relationship between the number of FC responses and behavior seen as related to adjustment to outer reality.

CF: The color-form determinant is scored for the use of both the color and form of the blot to produce a percept in which the color is of primary importance.

Klopfer states that in the CF determinant, the rational elements of the response have been placed in a minor position with respect to the affective elements. Thus CF responses indicate more impulsive emotional reactions than do FC responses, and are related to spontaneity (16, p. 283).
22. **There is no relationship between the number of CF responses and behavior seen as related to impulsivity or spontaneity.**

*C:* The pure color determinant is scored when the subject responds to the color and excludes the form. Varieties of the C response are pure crude color (C), color naming (Cn), color description (Cdes), and color symbolism (Csym); Cn and C are said to be pathological phenomena and Cdes and Csym are infrequently found in the records of "normals."

Klopfer states that the C response is indicative of the absence of control over affective functions and hence is related to the individual's impartial and unreasoned response to stimuli from the environment (16, p. 294).

23. **There is no relationship between the number of C responses and behavior seen as related to the absence of control of reactions to stimuli from the environment.**

**Relevant Studies**

Discussions of Rorschach validation have been published for a number of years. Hertz (11) has listed four general approaches to the problem of validation: (a) comparison of Rorschach findings with extensive individual case studies, (b) comparison of groups with known differences in intelligence and personality picture,
(c) direct experimentation, and (d) comparison of Rorschach findings with independent objective criteria.

The comparison of Rorschach findings with extensive individual case studies is a method infrequently used although there are a few instances, for example, the work of Murray (18), that of the OSS Assessment staff (28) and the investigation by Kelly and Fiske (15) of trainees in the clinical psychology program of the Veteran's Administration. Although both Murray and the OSS staff reported the Rorschach to be useful, Kelly and Fiske concluded that the Rorschach was of little value in predicting their criteria drawn from training status and staff evaluations.

None of these three studies was intended to be a study of the validity of the Rorschach, although each has been occasionally considered as such. The writer feels that the case for the validity of the Rorschach cannot be completely decided on available evidence of this variety particularly when the predictions are made from impressions drawn from the entire record, which is as much a test of the interpreter's skill as it is of the instrument.

Many investigations have attempted to use information drawn from the Rorschach to discriminate between identifiable groups, the original approach used by Rorschach (22). This approach to validation seems to be the one most frequently used and is generally an attempt to differentiate between individuals placed in particular
diagnostic categories and either normals or those placed in other categories.

Two methods are commonly used to discriminate between groups: (a) the sign approach, where values are assigned to various variables or relationships between variables; and (b) the content analysis approach, where the subject's verbal response is investigated for the presence or absence of various concepts.

The sign approach is the classical method of arriving at a differential diagnosis through the Rorschach method. Signs for the differentiation of schizophrenics have been reported by Beck (3), Rickers-Ovsiankina (19) and more recently by Thiesen (26). Berkowitz and Levine (5) found only one of the nine "neurotic" signs of Miale and Harrower-Erickson (17) to differentiate between a group of neurotics and a group of schizophrenics.

In view of the questionable reliability of diagnostic categories, this approach does not appear completely adequate as a source of criterion data for the validation of the test, although it does discourage claims at such diagnoses.

The content analysis approach has gained a wide following in recent years and successful attempts to differentiate between groups have been reported in the literature. Apparently the most striking results have been obtained where attention has been focused
on a particular determinant.

Hammer and Jacks (10) found it possible to differentiate between rapists and pedophiles by evaluating the human movement responses for extensor (aggressive) and flexor (passive) kines thesis. However, they used only movement responses to Card III which makes generalization difficult to the cards as a whole.

Gorlow, Zimet and Fine (9) report distinguishing between groups of juvenile delinquents and non-delinquents matched for intelligence and age through the analysis of responses revealing hostility or anxiety. The delinquent group was found to have higher scores on both hostility and anxiety and to give fewer responses.

Until more is known about the psychological aspects of criminality, independent of the Rorschach technique, the above studies cannot be considered as complete validity studies, from a methodological point of view.

Eichler (7) found support for hypotheses relating Rorschach variables to anxiety under experimental conditions. His experimental (stress) group was found to show more shading responses, fewer whole responses, fewer total responses, and more oligophrenic details, when it was compared to a non-stressed group of controls.
In another investigation using stressed and non-stressed groups, Baker and Harris (2) tested Beck's hypothesis concerning the relationships between the F+% and color relationships, intellectual and emotional control. A positive but not quite significant correlation was found between the color variable and variability of performance under stress.

In a paper on methodological considerations in Rorschach validation, Schneider (23) points out that many studies designed to investigate validity utilize criterion variables whose relationship to other personality variables is not known, citing particularly studies that involve the use of drugs and hypnosis. The studies of Eichler and Baker and Harris would be acceptable as validations of the Rorschach technique if more were known about the relationships between their stress situations and other independent situations productive of anxiety.

Some recent efforts to relate Rorschach data to independent objective criteria have been made by Altus and Altus (1), Tucker (27), and Holzberg and Belmont (14).

Altus and Altus compared movement responses to the scores of 100 college students on the Ohio State Psychological Examination and found significant curvilinear relationships, as indicated by an obtained eta that exceeded the product moment correlation between
these variables. The highest relationship was found for the non-popular "unstereotyped" movement responses (eta = .68).

A study by Tucker and the one by Holzberg and Belmont related Rorschach scores to Wechsler-Bellevue test results. Tucker found his highest correlation between human movement and Similarities (r = .447), while the highest relationship found by Holzberg and Belmont was that between W% and Similarities (r = -.32), and they found further significant positive relationships between Information and R (total responses) and M (human movement responses). Form-color responses were found to be related positively to Similarities.

These investigations lend support to the contention that some Rorschach variables, particularly the human movement response, are related to intelligence.

Fonda (8) investigated the relationship between the white space response (S) and the use of the question (?) alternative on the GAMIN and Guilford-Martin Personnel Inventories and found what he felt was partial confirmation of the classical interpretation of S as an indicator of oppositional tendencies, when responses determined primarily by S and not by other aspects of the blot were considered.
Steisel (24), using as criteria the postural sway test, Eysenck's ink blot suggestion test, and variations of the autokinetic effect, found no support for the hypothesized relationships between various Rorschach determinants and suggestibility. Questions may be raised about a possible ambiguity in the term "suggestibility" itself, possible differences between "suggestibility" as measured by Eysenck's test and the Rorschach, and response to the autokinetic effect, as measured, and other criteria of suggestibility.

Studies using ratings as the criterion variable are frequently criticized because of the subjectivity of such a criterion. However, as the Committee on Test Standards (25) points out, construct validity is studied when there is no definitive criterion of the quality under question and where an indirect approach must be used.

A number of research efforts have related Rorschach variables to ratings made on the basis of case histories. Of these, Yound and Higgenbotham (29) found results supportive of the hypothesis that form-color (FC) responses are related to positive emotional and social adjustment to the environment, but did not confirm the hypothesis that pure color responses (C) were related to impulsive behavior. In another investigation, Riley (21) investigated impulsivity by having subjects rated by acquaintances
and, independently, from the Rosenzweig P-F test. Positive results were found for weighted aggregations of color determinants emphasizing the color-form (CF) and pure color (C) responses.

It should be noted that responses in the latter study were scored according to Rapaport (20) who specifies quite rigid criteria of scoring.

Holtzman (12, 13) has tested hypotheses relating Rorschach ratios to the personality traits of gregariousness, shyness, and impulsivity, using as the independent variable ratings made of each other by college students in two cooperative living groups. The lack of support of the hypotheses in the study appears to be due not to the design but to the usual confusion of the extravert-introvert behavioral classification as used in popular speech with the "experience type," as measured by the Rorschach. In his original publication, Rorschach (22, p. 87) stressed that the "experience type" was related not to behavior but to experience.

It will be seen from the above literature that one feasible method of approaching the investigation of the construct validity of Rorschach variables would be to find the relationship between the variables and some independent measure of the constructs to which the variables are purported to be related.
In a recent paper, Cronbach and Meehl (6) have discussed the problems involved in construct validation. With respect to the Rorschach they comment that inferences should be evaluated separately and in turn against observable behavior so that the steps of inference will be both clear and obvious.

The steps taken to meet these requirements will be discussed in the following section.
II. PROCEDURE

It was decided to use an experimental design in which behavior descriptions drawn from Rorschach hypotheses could be compared with the everyday behavior of a large group of subjects.

By using a design in which the subjects also served as judges, as in Holtzman's studies (12, 13), a large number of judgments could be obtained. It was realized that the use of non-trained judges could be a source of unreliability, but it was decided that the use of peer judgments could be justified on the grounds that the extensive day-to-day contact among the subjects would possibly enable them to make better judgments of everyday patterns of behavior than could be made by trained judges with limited contact with the subjects.

The group selected to serve as both subjects and judges was from the Ohio State University School.

The University School is an experimental and demonstration school, with pupils in grades ranging from Kindergarten to Grade 12. The purpose of the school is to provide experience and training for students in The Ohio State University College of Education, and to provide a setting for the investigation of basic problems in education, in addition to providing the students enrolled in the school with a broad and basic educational program. The educational process is implemented by the "core program," a unit of study selected by the
students and their core instructor to explore current interests and to bring together the more traditional and academic areas of study. The core instructor also serves as "home room" teacher and counselor for the students.

A. Subjects

The subjects used in this investigation were the entire eleventh grade of the Ohio State University School. Of the 34 students in this group, 17 boys and 17 girls, all had attended classes together for at least a year, and a majority had attended both classes and extra-curricular activities together from the first grade onward.

Tests of general intelligence: Stanford-Binet, Wechsler-Bellevue, or Wechsler Intelligence Scale for Children had been administered to most of the students as a part of their educational program. Scores on the tests ranged from an IQ of 185 (Binet) for the highest score in the class to a lowest score of 91 (Wechsler-Bellevue, Form I). On inspection of the 22 available scores, the majority were found to cluster around IQ 120, and 6 were found to exceed IQ 135, when roughly equated to Stanford-Binet scores. This suggests that this group of students is above average in intelligence when compared to the eleventh grade population in the public schools, or it may mean that factors of motivation or verbal fluency are operating in this population. Because some of the students had no test score available and because
of the variety of examiners and tests, no further analysis was made of the intelligence test data.

Within University School, much emphasis is placed on group participation both in the classroom and in extracurricular activities. This, together with the relatively small size of the class, appeared to facilitate the students' knowledge of one another as individuals.

The students had been participants in a number of other studies, and it may be assumed that they had acquired some degree of "research sophistication" through doing so. Since there had been little involvement of or "feedback" to the students in previous projects, there was the likelihood that they might react to this project with hostility and non-cooperative attitudes. Efforts were made to avoid this possibility. (See "Method")

Clearly this group of students is not typical of the average high school class, particularly from the standpoints of intellectual level and degree of "research sophistication." On the other hand, it seemed likely that these students, having worked and played together over a long period of time and being above average in intelligence and accustomed to making evaluations of themselves and others, are better qualified than most students of comparable age to make valid identifications of the behavior patterns of their classmates.
B. Tests

In order to construct a scale of items that would measure the patterns of behavior under investigation, three judges, one of whom has worked closely with the subjects, discussed the hypothesized meanings of the Rorschach variables (see "Statement of the Problem") and drew up a list of 100 preliminary items. The list was then independently re-evaluated by the judges, and 60 items that were thought to be adequate and reasonable non-ambiguous indices of the behavior patterns were finally selected.

In view of the superior intellectual level of the subjects and the inferential nature of some of the behavior suggested by the hypotheses, no effort was made to exclude items which might imply such behavior. The list was further screened by the "core" instructor, who felt that the students should be able to identify each other in terms of the items.

The following are the items, together with the Rorschach variables which suggested them; the numbers are the item numbers used in the final form of the check-list, and will be used hereafter for purposes of identification.

---

1 Dr. H. L. Coon, Dr. H. B. Pepinsky, and the writer.

2 The "core" instructor was Mr. F. A. Buchanan.
a. Behavior related to overintellectualization (W%)
   19. Shows off by using big words
   37. Tries to be a brain

b. Behavior related to organizational ability (superior W)
   1. Is an organizer
   36. Gets things done
   54. Accomplishes a lot

c. Behavior related to practicality (D%)
   2. Is a plodder
   38. Has ideas that are easy to understand
   55. Uses "common sense"

d. Behavior involving criticism (d%)
   3. Is fussy about details
   21. Is overcritical of others
   39. Argues a lot

e. Behavior related to an overconcern for details (Dd%)
   3. Is fussy about details

f. Behavior related to artistic responsiveness or a sense of the unusual (Dd%)
   4. Comes up with unusual ideas
   40. Is artistic

g. Behavior related to oppositional tendencies, intellectual aggressiveness or the use of an unusual approach (S)
   22. Is a reckless driver
   19. Shows off by using big words
   37. Tries to be a brain
   39. Argues a lot
   48. Is stubborn
   21. Is overcritical of others
   29. Always has to have his own way
h. Behavior related to self-criticism or self-destructiveness (S)

11. Has a tight grip on his feelings
28. Is very self-conscious
32. Is moody

i. Behavior related to creative and intellectual capacities and maturity (M)

5. Has a good imagination
56. Is a mature person
41. Thinks before acting
4. Comes up with unusual ideas
40. Is artistic

j. Behavior related to excessive fantasy (M)

23. Is a dreamer
26. Is preoccupied

k. Behavior related to immaturity and acceptance of biological urges (FM)

6. Likes to tell dirty stories
24. Is immature
42. Tries to win approval

l. Behavior related to inner tension (m)

7. Gripes to his friends but doesn't tell the group
25. Can't let himself go
44. Has trouble growing up
57. Acts tense

m. Behavior related to an attempt to handle anxiety by intellectual means (k)

37. Tries to be a brain
19. Shows off by using big words
43. Has a lot of ideas
n. **Behavior related to unsystematized anxiety (K)**

27. Doesn't trust his own ideas
9. Can't make up his mind
46. Worries a lot
26. Is preoccupied
8. Ideas he contributes to discussion are not clear
45. Seems unsure of himself

o. **Behavior related to control or self-consciousness (FK)**

10. Is too concerned about his own behavior
28. Is very self-conscious
47. Can't accept compliments or praise gracefully
58. Has an "inferiority complex"
11. Has a tight grip on his feelings
25. Can't let himself go

p. **Behavior related to control (F%)**

11. Has a tight grip on his feelings
25. Can't let himself go
29. Always has to have his own way
48. Is stubborn

q. **Behavior related to social sensitivity or control (Fc)**

12. Is a sensitive person
30. Is suspicious of other people
49. Is a tactful person
60. Goes along with the group
11. Has a tight grip on his feelings
25. Can't let himself go

r. **Behavior related to poorly controlled contact needs or sensuality (c)**

13. Bothers people
31. Can't keep his hands off you

s. **Behavior related to artistic sensibilities (C')**

40. Is artistic
5. Has a good imagination
4. Comes up with unusual ideas
t. Behavior related to emotional depression or mood swings (C1)

14. Is "down in the dumps" most of the time
32. Is moody
50. Is afraid to be friendly
59. "Gets up on the wrong side of the bed"

u. Behavior related to emotional adjustment to outer reality (FC)

15. Is a good friend
33. Gets along well with others
51. Is liked by most people
18. Is able to handle most situations
54. Accomplishes a lot

v. Behavior related to impulsivity or spontaneity (CF)

16. Is the life of the party
34. Is irritable
52. Is bubbling with energy: is never still
53. Is easily angered

w. Behavior related to the absence of control of stimuli from without (C)

17. Believes anything you tell him
35. Is easily led
53. Is easily angered

The items were stated in terms of an assumed positive relationship with the Rorschach variables, and there is more than one item for each variable. This was thought to be defensible on the grounds of holding the check-list to a reasonable length while providing a larger sample of judgments relating to particular behavior patterns. The judges also thought that any other significant relationships found between the Rorschach variables and items not included under the original hypotheses could be evaluated for consistency with the hypotheses.
Two forms of the check-list were prepared for administration to the group; one form for the boys and one for the girls. The forms differed only in the pronouns used. This was done in an attempt to "personalize" the check-list, and for the same reason a space within the instructions on each form was left open and the name of the particular student being evaluated was entered in this space.

The students were requested not to write their own names on the check-lists so that they could feel free to respond without concern about possible personal involvement.

An attempt was made to control for possible "halo" and "end" effects by scattering items referring to a particular hypothesis evenly throughout the list of items.

A copy of the check-list presented to the subjects is included as Appendix I.

The standard set of Rorschach plates was used by a trained examiner. Following Klopfer's standard procedure (16), he administered this test individually and privately to each of the subjects.

C. Method

To gain the cooperation of the class, the core instructor and the research director of the school discussed with the students the

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1 The Rorschach test was administered by the writer.

2 The research director was Dr. H. L. Coon.
possibility of making use of group and individual assessment data such as would be obtained in this project. The class elected to choose a "core topic" of instruction in which such data could be used. It was further agreed that the experimenter would discuss the project with them upon its completion.

The individual Rorschach examinations were begun during the second week of the fall quarter, 1955, and one student was tested each morning that the school was in session until all testing had been completed.

The Rorschach was administered following Klopfer's instructions and a careful inquiry was conducted with each subject. Each record was scored shortly after it was obtained and then was checked again for scoring accuracy and completeness prior to the tabulation of the check-list.

Following the completion of the individual Rorschach examinations, the check-list was administered to the class. To avoid tiring the subjects, a maximum of five students was rated each day with the usual procedure being to have only four students evaluated.

Thirty-four packets of the check-list for the four or five students to be rated were made up prior to each day's assessment. To identify the forms of the students rating themselves, the words "rate yourself" were written across the top of the form. With the exception of the self-ratings, which were presented first, the forms for any given
assessment period were presented in random order.

Since the individual administration of the rating forms was impossible for reasons of time and space, the students being rated were present in the group, a procedure which might have inhibited ratings by the two students seated on either side of the evaluated subject. However, spot-checking during the administration indicated that except for a few cases the random presentation of the lists had minimized this as a problem. Further, one might hypothesize that having the evaluated student present in the group might provide for cues leading to a more reliable evaluation of him by the group as a whole.

In spite of the careful preparation of the class for the group evaluation, the tedious nature of the task brought out some hostility. The students felt free to express this openly, however, and there was none of the patterning of responses e.g., checking every other one, that had disrupted other studies in which the group had participated. This suggests that the initial time spent in gaining the cooperation of the group was well invested.
III. ANALYSIS OF DATA AND RESULTS

A. Rorschach

After the scoring of the Rorschach protocols had been checked, the location variables \( W, D, d, \) and \( Dd \) and/or \( S \) were converted to percentages of the total number of responses for each student, following the usual procedure according to Klopfer (16, p. 188), and these values were entered into a table. The number of \( S \) responses was also entered separately, with the "additional" \( S \) (those not primary determinants of the response) responses counted as having half the weight of responses determined primarily by the white space.

The protocols were then evaluated for superior \( W \): the number of original whole responses involving good form was tabulated for each record.

The number of determinants in each category was determined for each protocol, and this figure was entered into the table as a raw score. Again, "additional" determinants were included but with half the value of their actual number. The one exception to this rule was in the case of the form determinant, \( F \), which was entered as a percentage of total responses.

The general rule followed was to use the Rorschach variables in the form from which interpretations are usually made (16).

Means and standard deviations were then computed for the
Rorschach data and are shown in Table 1. It will be seen that the distributions in most cases have the positive skewness typical of Rorschach variables.

B. Check-list

The completed check-lists were tabulated and checked by an independent worker. For each item, an individual's score consisted of the number of times the item was checked by others as describing his behavior. The self-ratings were not included.

The item scores were entered into a table and means, standard deviations, and item intercorrelations were computed.

From the means and standard deviations (See Table 2), it will be seen that a number of the item distributions show positive skewness. It appears that traits seen by the subjects as common in the group are related to zero or negative skewness while uncommon traits are related to positive skewness.

From the table of inter-item correlations derived from responses to the check-list (shown in Appendix II), it is possible to make some inferences about the performance of the group. Since one possibility is that the students might tend to check their friends only on "favorable" items, item 15 (is a good friend) will be taken as a reference point.

Considering only correlations between items of a magnitude attributable to chance variation only 1 percent of the time when the

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1The work on the check-list was done by Shirley M. Clyde.
Table 1

Means and Standard Deviations of Rorschach Variables

<table>
<thead>
<tr>
<th>Rorschach Variable</th>
<th>Mean</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>W%</td>
<td>54.95</td>
<td>21.88</td>
</tr>
<tr>
<td>D%</td>
<td>33.39</td>
<td>17.91</td>
</tr>
<tr>
<td>d%</td>
<td>2.59</td>
<td>4.93</td>
</tr>
<tr>
<td>Dd%</td>
<td>9.06</td>
<td>9.66</td>
</tr>
<tr>
<td>O + W</td>
<td>1.50</td>
<td>1.52</td>
</tr>
<tr>
<td>S</td>
<td>1.03</td>
<td>1.43</td>
</tr>
<tr>
<td>M</td>
<td>2.88</td>
<td>2.07</td>
</tr>
<tr>
<td>FM</td>
<td>3.12</td>
<td>2.03</td>
</tr>
<tr>
<td>m</td>
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<td>0.77</td>
</tr>
<tr>
<td>k</td>
<td>0.38</td>
<td>0.77</td>
</tr>
<tr>
<td>K</td>
<td>0.31</td>
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</tr>
<tr>
<td>FK</td>
<td>1.09</td>
<td>1.25</td>
</tr>
<tr>
<td>F%</td>
<td>38.61</td>
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<tr>
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<td>1.60</td>
</tr>
<tr>
<td>C'</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td>FC</td>
<td>1.59</td>
<td>1.23</td>
</tr>
<tr>
<td>CF</td>
<td>1.91</td>
<td>1.51</td>
</tr>
<tr>
<td>C</td>
<td>0.19</td>
<td>0.37</td>
</tr>
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</table>
### Table 2

Means and Standard Deviations of the Check-list Items

<table>
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<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<td>3.32</td>
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<td>2</td>
<td>13.88</td>
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<td>32</td>
<td>4.15</td>
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</tr>
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<td>3</td>
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<td>6.12</td>
<td>33</td>
<td>17.21</td>
<td>6.16</td>
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<tr>
<td>4</td>
<td>12.26</td>
<td>6.22</td>
<td>34</td>
<td>2.65</td>
<td>2.36</td>
</tr>
<tr>
<td>5</td>
<td>13.91</td>
<td>6.26</td>
<td>35</td>
<td>5.32</td>
<td>3.12</td>
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<td>36</td>
<td>13.00</td>
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<td>3.25</td>
<td>55</td>
<td>12.35</td>
<td>5.93</td>
</tr>
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<td>1.71</td>
<td>1.27</td>
<td>56</td>
<td>10.97</td>
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<td>27</td>
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<td>3.29</td>
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<td>1.41</td>
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<tr>
<td>30</td>
<td>2.44</td>
<td>1.95</td>
<td>60</td>
<td>18.26</td>
<td>3.04</td>
</tr>
</tbody>
</table>
true correlation is zero, it may be seen that while the students tend to give their friends checks on the "favorable" items, they do not consistently avoid the "unfavorable" items when evaluating their friends.

The items are the following:

5. Has a good imagination (r = .54)
8. Ideas he contributes to discussion are not clear (r = -.56)
13. Bothers people (r = -.59)
16. Is the life of the party (r = .66)
18. Is able to handle most situations (r = .67)
33. Gets along well with others (r = .87)
36. Gets things done (r = .54)
38. Has ideas that are easy to understand (r = .73)
41. Thinks before acting (r = .56)
43. Has a lot of ideas (r = .55)
45. Seems unsure of himself (r = -.58)
49. Is a tactful person (r = .65)
50. Is afraid to be friendly (r = -.55)
51. Is liked by most people (r = .90)
54. Accomplishes a lot (r = .51)
55. Uses "common sense" (r = .60)
56. Is a mature person (r = .62)
58. Has an "inferiority complex" (r = -.72)
Items selected by the judges as being related to particular behavior patterns tend to be highly interrelated in most cases. A cluster analysis of the check-list was attempted but was not successful because of the complexity of the interrelationships among the items. It was thought that a factor analysis might provide meaning to the clusters but that such a technique would be beyond the scope of the present investigation. In any case, it should not be construed from the data presented in the following sections that items presented for a given hypothesis are necessarily independent of items presented for other hypotheses.

C. Results

Intercorrelations were computed between each Rorschach variable and all check-list items and may be found in Appendix II. Because of the lack of sensitivity of the check-list and the decrease in sensitivity that may have resulted from the use of the Rorschach variables as discrete rather than interrelated sources of hypotheses, it was decided to accept a single correlation significant at the 5 per cent level of probability as indicating rejection of the null hypothesis for any specific Rorschach hypothesis. With 34 cases, the standard error of a true correlation of zero magnitude is .17 and will exceed .34 only 5 per cent of the time.

As tests of Hypothesis 1, W% as related to overintellectualization, Items "shows off by using big words" (19) and "tries to be a brain"
(37) were not found to be related to W% and the null hypothesis is upheld. The results are shown in Table 3.

Table 3

Intercorrelations between W% and Items for Hypothesis 1

<table>
<thead>
<tr>
<th>Items</th>
<th>19</th>
<th>37</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. W%</td>
<td>.02</td>
<td>-.15</td>
</tr>
</tbody>
</table>

**sig. at the 1% level

Testing Hypothesis 2, superior W as related to organizational ability, the Items "is an organizer" (1), "gets things done" (36), and "accomplishes a lot" (54), were found to be related to good original whole responses (O + W) as shown in Table 4.

While the correlation between Item 36 and O + W is not quite significant at the 5 per cent level, the strength of the relationship between O + W and Items 1 and 54 is sufficient to reject the null hypothesis.

Hypothesis 3, D% as related to practicality, and using Items "is practical" (2), "is a plodder" (20), "has ideas that are easy to under-
Table 4

Intercorrelations between O + W and Items for Hypothesis 2

<table>
<thead>
<tr>
<th>Items</th>
<th>1</th>
<th>36</th>
<th>54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. O + W</td>
<td>.40*</td>
<td>.33</td>
<td>.34*</td>
</tr>
<tr>
<td>Item 1</td>
<td></td>
<td>.87**</td>
<td></td>
</tr>
<tr>
<td>Item 36</td>
<td></td>
<td>.77**</td>
<td></td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level

"stand" (38), and "uses 'common sense'" (55), was found to be supported in the null form as may be seen in Table 5.

Table 5

Intercorrelations between D% and Items for Hypothesis 3

<table>
<thead>
<tr>
<th>Items</th>
<th>2</th>
<th>20</th>
<th>38</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. D%</td>
<td>.07</td>
<td>-.23</td>
<td>-.05</td>
<td>.01</td>
</tr>
<tr>
<td>Item 2</td>
<td></td>
<td>.56**</td>
<td>.74**</td>
<td>.86**</td>
</tr>
<tr>
<td>Item 20</td>
<td></td>
<td>.19</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Item 38</td>
<td></td>
<td></td>
<td>.75**</td>
<td></td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level
The test of Hypothesis 4, \( d\% \) as related to critical behavior, yield the relationships tabulated in Table 6 for Items "is fussy about details" (3), "is overcritical of others" (21), and "argues a lot" (34).

Table 6

Intercorrelations between \( d\% \)
and Items for Hypothesis 4

<table>
<thead>
<tr>
<th>Items</th>
<th>3</th>
<th>21</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var.</td>
<td>d%</td>
<td>.26</td>
<td>.23</td>
</tr>
<tr>
<td>Item 3</td>
<td></td>
<td>.43*</td>
<td></td>
</tr>
<tr>
<td>Item 21</td>
<td></td>
<td></td>
<td>.59**</td>
</tr>
</tbody>
</table>

* sig. at the 5\% level, ** sig. at the 1\% level

While the relationships are suggestive, they are not statistically significant, and the null hypothesis is upheld.

Hypothesis 5, \( Dd\% \) as related to an overconcern with details, was found to be unsupported in the null form when tested against the Item "is fussy about details" (3). See Table 7.

Hypothesis 6, \( Dd\% \) related to artistic responsiveness and a sense of the unusual, and tested against Items "comes up with unusual ideas" (4) and "is artistic" (40) was found to be supported in the null form. See Table 7.
Table 7

Intercorrelations between Dd% and Items for Hypotheses 5 and 6

<table>
<thead>
<tr>
<th>Items</th>
<th>3</th>
<th>4</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var.</td>
<td>Dd%</td>
<td>.38*</td>
<td>.29</td>
</tr>
<tr>
<td>Item 3</td>
<td></td>
<td>.58**</td>
<td>.50*</td>
</tr>
<tr>
<td>Item 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*sig. at 5% level, **sig. at the 1% level

The test of S as related to oppositional tendencies, intellectual aggressiveness or a sense of the unusual, Hypothesis 7, was clearly unsupported in the null form. Items were "comes up with unusual ideas" (4), "shows off by using big words" (19), "is overcritical of others" (21), "is a reckless driver" (22), "always has to have his own way" (29), "tries to be a 'brain'" (37), "argues a lot" (39), and "is stubborn" (48). The relationships will be found in Table 8.

Hypothesis 8, S as related to self-critical behavior, was found to be upheld. The relationships between Items "has a tight grip on his feelings" (11), "is very self-conscious" (28), "is moody" (32) and S were not found to be significant. See Table 9.
Table 8

Intercorrelations between S
and Items for Hypothesis 7

<table>
<thead>
<tr>
<th>Items</th>
<th>4</th>
<th>19</th>
<th>21</th>
<th>22</th>
<th>29</th>
<th>37</th>
<th>39</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. S</td>
<td>.51**</td>
<td>.40*</td>
<td>.37*</td>
<td>.08</td>
<td>.30</td>
<td>.55**</td>
<td>.59**</td>
<td>.34*</td>
</tr>
<tr>
<td>Item 4</td>
<td>.53**</td>
<td>.35*</td>
<td>-.38*</td>
<td>.47*</td>
<td>.51**</td>
<td>.30*</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Item 19</td>
<td>.47*</td>
<td>-.29</td>
<td>.55**</td>
<td>.76**</td>
<td>.58**</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 21</td>
<td>-.06</td>
<td>.78**</td>
<td>.46*</td>
<td>.59**</td>
<td>.56**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 22</td>
<td>.07</td>
<td>-.26</td>
<td>-.03</td>
<td>.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 29</td>
<td></td>
<td>.40*</td>
<td>.52**</td>
<td>.51**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 37</td>
<td></td>
<td></td>
<td>.57**</td>
<td>.36*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 39</td>
<td></td>
<td></td>
<td></td>
<td>.68**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*sig. at 5% level, **sig. at the 1% level

Hypothesis 8, S as related to self-critical behavior, was found to be upheld. The relationships between Items "has a tight grip on his feelings" (11), "is very self-conscious" (28), "is moody" (32) and S were not found to be significant. See Table 9.

Hypothesis 9, which denies relationship between M and creative and intellectual capacities and maturity, was not upheld. Items were "comes up with unusual ideas" (4), "has a good imagination" (5),...
Table 9

Intercorrelations between S and Items for Hypothesis 8

<table>
<thead>
<tr>
<th>Items</th>
<th>11</th>
<th>28</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. S</td>
<td>.21</td>
<td>-.18</td>
<td>-.03</td>
</tr>
<tr>
<td>Item 11</td>
<td></td>
<td>.28</td>
<td>-.29</td>
</tr>
<tr>
<td>Item 28</td>
<td></td>
<td></td>
<td>-.22</td>
</tr>
</tbody>
</table>

"is artistic" (40), "thinks before acting" (41), and "is a mature person" (56). Correlations will be found in Table 10.

Table 10

Intercorrelations between M and Items for Hypothesis 9

<table>
<thead>
<tr>
<th>Items</th>
<th>4</th>
<th>5</th>
<th>40</th>
<th>41</th>
<th>56</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. M</td>
<td>.34*</td>
<td>.38*</td>
<td>.41*</td>
<td>.30</td>
<td>.35*</td>
</tr>
<tr>
<td>Item 4</td>
<td></td>
<td>.78**</td>
<td>.60**</td>
<td>.44*</td>
<td>.34*</td>
</tr>
<tr>
<td>Item 5</td>
<td></td>
<td></td>
<td>.59**</td>
<td>.64**</td>
<td>.89**</td>
</tr>
<tr>
<td>Item 40</td>
<td></td>
<td></td>
<td></td>
<td>.28</td>
<td>.36*</td>
</tr>
<tr>
<td>Item 41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.91**</td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level
Hypothesis 10, the test of M as related to excessive fantasy activity was upheld for the Items "is a dreamer" (23), and "is pre-occupied" (26). See Table 11.

Table 11

Intercorrelations between M and Items for Hypothesis 10

<table>
<thead>
<tr>
<th>Items</th>
<th>23</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var.</td>
<td>M</td>
<td>-.19</td>
</tr>
<tr>
<td>Item 23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis 11, FM as related to immaturity and acceptance of biological urges was supported in the null form when tested against Items "likes to tell dirty stories" (6), "is immature" (24), and "tries to win approval" (42). Intercorrelations will be found in Table 12.

Hypothesis 12, that relating m to inner tension and using Items "gripes to his friends but doesn't tell the group" (7), "can't let himself go" (25), "has trouble growing up" (44), and "acts tense" (57) was not upheld. Intercorrelations will be found in Table 13.

Hypothesis 13, k related to intellectualized anxiety, was tested by Items "shows off by using big words" (19), "tries to be a 'brain'"
Table 12

Intercorrelations between FM and Items for Hypothesis 11

<table>
<thead>
<tr>
<th>Items</th>
<th>6</th>
<th>24</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. FM</td>
<td>.30</td>
<td>-.04</td>
<td>-.16</td>
</tr>
<tr>
<td>Item 6</td>
<td></td>
<td>.45*</td>
<td></td>
</tr>
<tr>
<td>Item 24</td>
<td></td>
<td></td>
<td>-.12</td>
</tr>
</tbody>
</table>

*sig. at the 5% level

Table 13

Intercorrelations between m and Items for Hypothesis 12

<table>
<thead>
<tr>
<th>Items</th>
<th>7</th>
<th>25</th>
<th>44</th>
<th>57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. m</td>
<td>.26</td>
<td>.13</td>
<td>.28</td>
<td>.42*</td>
</tr>
<tr>
<td>Item 7</td>
<td></td>
<td>-.01</td>
<td>.52**</td>
<td>.28</td>
</tr>
<tr>
<td>Item 25</td>
<td></td>
<td>-.33</td>
<td>.54**</td>
<td></td>
</tr>
<tr>
<td>Item 44</td>
<td></td>
<td></td>
<td></td>
<td>.12</td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level
(37), and "has a lot of ideas" (43) and was not upheld. See Table 14.

Table 14

Intercorrelations between k
and Items for Hypothesis 13

<table>
<thead>
<tr>
<th>Items</th>
<th>19</th>
<th>37</th>
<th>43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. k</td>
<td>.05</td>
<td>.39*</td>
<td>.09</td>
</tr>
<tr>
<td>Item 19</td>
<td></td>
<td>.76**</td>
<td>.46*</td>
</tr>
<tr>
<td>Item 37</td>
<td></td>
<td>.33</td>
<td></td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level

Hypothesis 14, K related to unsystematized anxiety, as tested by Items "ideas he contributes to discussion are not clear" (8), "can't make up his mind" (9), "is preoccupied" (26), doesn't trust his own ideas" (27), "seems unsure of himself" (45), and "worries a lot" (46) was clearly unsupported. Item intercorrelations will be found in Table 15.

Hypothesis 15, denying relationship between FK and behavioral signs of control and self-consciousness, utilized Items "is too concerned about his own behavior" (10), "has a tight grip on his feelings" (11), "can't let himself go" (25), "is very self-conscious" (28), "can't
Table 15

Inter correlations between K
and Items for Hypothesis 14

<table>
<thead>
<tr>
<th>Items</th>
<th>8</th>
<th>9</th>
<th>26</th>
<th>27</th>
<th>45</th>
<th>46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. K</td>
<td>.47*</td>
<td>.42*</td>
<td>-.08</td>
<td>.47*</td>
<td>.53**</td>
<td>.12</td>
</tr>
<tr>
<td>Item 8</td>
<td>.58**</td>
<td>-.11</td>
<td>.50*</td>
<td>.50*</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Item 9</td>
<td>-.24</td>
<td>.68**</td>
<td>.58**</td>
<td>.40*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 26</td>
<td>-.05</td>
<td>.00</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.82**</td>
<td>.44*</td>
</tr>
<tr>
<td>Item 45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.51**</td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level

accept compliments or praise gracefully" (47), and "has an 'inferiority complex'" (58). The correlations of these items with FK will be found in Table 16.

While the items referring to self-consciousness are only suggestive of a possible relationship, the 'control' items are significant and the null hypothesis is not upheld.

Hypothesis 16, F% as related to control, was clearly supported. The relationships between F% and Items "has a tight grip on his feelings" (11), "can't let himself go" (25), "always has to have his own way"
Table 16

**Intercorrelations between FK**

and **Items for Hypothesis 15**

<table>
<thead>
<tr>
<th>Items</th>
<th>10</th>
<th>11</th>
<th>25</th>
<th>28</th>
<th>47</th>
<th>58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var.</td>
<td>FK</td>
<td>.14</td>
<td>.36*</td>
<td>.42*</td>
<td>.23</td>
<td>.23</td>
</tr>
<tr>
<td>Item</td>
<td>10</td>
<td>.23</td>
<td>.30</td>
<td>.51**</td>
<td>.26</td>
<td>.49*</td>
</tr>
<tr>
<td>Item</td>
<td>11</td>
<td>.54**</td>
<td>.28</td>
<td>-.29</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>25</td>
<td>.48*</td>
<td>.05</td>
<td>.34*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>28</td>
<td>.19</td>
<td>.56**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.33</td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level

(29), and "is stubborn" (48) were not found to be significant. See Table 17.

Hypothesis 17, Fc as related to social sensitivity or control, was not supported when tested against Items "has a tight grip on his feelings" (11), "is a sensitive person" (12), "can't let himself go" (25), "is suspicious of other people" (30), "is a tactful person" (49), and "goes along with the group" (60). Intercorrelations will be found in Table 18.
Table 17

Intercorrelations between F% and Items for Hypothesis 16

<table>
<thead>
<tr>
<th>Items</th>
<th>11</th>
<th>25</th>
<th>29</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. F%</td>
<td>-0.27</td>
<td>-0.22</td>
<td>0.03</td>
<td>0.18</td>
</tr>
<tr>
<td>Item 11</td>
<td>0.54**</td>
<td>-0.02</td>
<td>-0.30</td>
<td></td>
</tr>
<tr>
<td>Item 25</td>
<td>0.02</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 29</td>
<td>0.51**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**sig. at the 1% level

Table 18

Intercorrelations between Fc and Items for Hypothesis 17

<table>
<thead>
<tr>
<th>Items</th>
<th>11</th>
<th>12</th>
<th>25</th>
<th>30</th>
<th>49</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. Fc</td>
<td>0.26</td>
<td>0.21</td>
<td>0.51**</td>
<td>0.41*</td>
<td>-0.20</td>
<td>-0.30</td>
</tr>
<tr>
<td>Item 11</td>
<td>0.29</td>
<td>0.54**</td>
<td>0.16</td>
<td>0.16</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Item 12</td>
<td>0.43*</td>
<td>0.08</td>
<td>-0.22</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 25</td>
<td>0.28</td>
<td>-0.08</td>
<td>-0.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 30</td>
<td>-0.29</td>
<td>-0.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 49</td>
<td>0.45*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level
In this case the specific interpretation of Fe by Klopfer as "tact" is not supported, while the interpretations related to extreme sensitivity and control are upheld.

Hypothesis 18, c as related to contact needs, was not testable because only two responses of this type were found in the entire sample of Rorschach protocols.

Hypothesis 19, C related to artistic sensibilities, was supported in the null form. None of the relationships with Items "comes up with unusual ideas" (4), "has a good imagination" (5), or "is artistic" (40) were found to be significant, although Item 4 suggests a possible relationship. See Table 19.

Table 19

Intercorrelations between C' and Items for Hypothesis 19

<table>
<thead>
<tr>
<th>Items</th>
<th>4</th>
<th>5</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var.</td>
<td>C'</td>
<td>.28</td>
<td>.04</td>
</tr>
<tr>
<td>Item 4</td>
<td>.78**</td>
<td>.60**</td>
<td></td>
</tr>
<tr>
<td>Item 5</td>
<td></td>
<td>.59**</td>
<td></td>
</tr>
</tbody>
</table>

**Sig. at the 1% level**
Hypothesis 20, C' related to mood swings or emotional depression, and evaluated with Items "is 'down in the dumps' most of the time" (14), "is moody" (32), "is afraid to be friendly" (50), and "gets up on the wrong side of the bed" (59) was not supported in the null form. Intercorrelations will be found in Table 20.

Table 20

Intercorrelations between C'
and Items for Hypothesis 20

<table>
<thead>
<tr>
<th>Items</th>
<th>14</th>
<th>32</th>
<th>50</th>
<th>59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. C'</td>
<td>-.12</td>
<td>.06</td>
<td>.18</td>
<td>.41*</td>
</tr>
<tr>
<td>Item 14</td>
<td></td>
<td>.38*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 32</td>
<td></td>
<td></td>
<td>-.16</td>
<td>.38*</td>
</tr>
<tr>
<td>Item 50</td>
<td></td>
<td></td>
<td></td>
<td>.06</td>
</tr>
</tbody>
</table>

* sig. at the 5% level

Hypothesis 21, FC related to behavior indicative of emotional adjustment to outer reality, was not supported. Items were "is a good friend" (15), "is able to handle most situations" (18), "gets along well with others" (33), "is liked by most people" (51), and "accomplish-
es a lot" (54). The intercorrelations with FC will be found in Table 21.

Table 21

Intercorrelations between FC and Items for Hypothesis 21

<table>
<thead>
<tr>
<th>Items</th>
<th>15</th>
<th>18</th>
<th>33</th>
<th>51</th>
<th>54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. FC</td>
<td>.02</td>
<td>.36*</td>
<td>-.02</td>
<td>-.04</td>
<td>.36*</td>
</tr>
<tr>
<td>Item 15</td>
<td>.67**</td>
<td>.87**</td>
<td>.90**</td>
<td>51**</td>
<td></td>
</tr>
<tr>
<td>Item 18</td>
<td>.66**</td>
<td>.60**</td>
<td>.74**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 33</td>
<td>90**</td>
<td>.58**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 51</td>
<td>.45*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*sig. at the 5% level, **sig. at the 1% level

Hypothesis 22, CF as related to spontaneity or impulsivity, was clearly supported in the null form. Items from the hypothesis were "is the life of the party" (16), "is irritable" (34), "is bubbling with energy: is never still" (52), and "is easily angered" (53). Intercorrelations will be found in Table 22.

Hypothesis 23, C as related to an absence of control over responsiveness to external stimuli was not supported in the null form. Items were "believes anything you tell him" (17), "is easily led" (35), and "is easily angered" (53) were found to be related to C as seen in Table 23.
Table 22

Intercorrelations between CF and Items for Hypothesis 22

<table>
<thead>
<tr>
<th>Items</th>
<th>16</th>
<th>34</th>
<th>52</th>
<th>53</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. CF</td>
<td>-.03</td>
<td>.16</td>
<td>.05</td>
<td>.13</td>
</tr>
<tr>
<td>Item 16</td>
<td>-.12</td>
<td>.79**</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>Item 34</td>
<td>.12</td>
<td>.75**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 52</td>
<td></td>
<td></td>
<td>.09</td>
<td></td>
</tr>
</tbody>
</table>

**sig. at the 1% level

Table 23

Intercorrelations between C and Items from Hypothesis 23

<table>
<thead>
<tr>
<th>Items</th>
<th>17</th>
<th>35</th>
<th>53</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ror. Var. C</td>
<td>.58**</td>
<td>.26</td>
<td>-.01</td>
</tr>
<tr>
<td>Item 17</td>
<td></td>
<td>.65**</td>
<td>.15</td>
</tr>
<tr>
<td>Item 35</td>
<td></td>
<td></td>
<td>-.10</td>
</tr>
</tbody>
</table>

**sig. at the 1% level
IV. DISCUSSION

The support of Hypothesis 1, $W\%$ related to overintellectualization, is open to interpretation. Since significant positive relationships were found to refute Hypothesis 2, superior $W$ related to organizational ability, there is the possibility that each of the possible varieties of the whole response should have a specific interpretation, interpretations which are concealed by the lumping of the responses so that the percentage of $W$ can be computed.

$W\%$ was found to be significantly related to "is suspicious of other people" (30: $r=-.42$) and "tries to win approval" (42: $r=-.45$), but there seem to be no clear meanings for these relationships.

Significant relationships were also found between superior $W$ and Items "is a tactful person" (49: $r=.34$) and "uses 'common sense'" (55: $r=.38$). These items are strongly related to the hypothesized items (see Appendix II) and may possibly reflect further characteristics of "good organizers."

The support of the null hypothesis for $D\%$, Hypothesis 3, may well be a refutation of the concrete generalization from test performance to behavior in general which is traditionally behind the interpretation of $D\%$ as being related to practicality. However, there is the possibility that the items selected as tests of the hypothesis are at fault. Since $D\%$ was found to be significantly related to Items "is suspicious of other people" (30: $r=.40$), "tries to win approval" (42: $r=.44$), and
"goes along with the group" (60: r = .42), the possibility remains that these items may identify "practical" modes of behavior in a competitive group, or that they may point toward another meaning for D% which should be investigated.

Hypothesis 4, D% as related to critical behavior, was found to be supported in the null form. While the relationships found were not significant, they were of a magnitude (see Table 6) to suggest that further refinements of the statistical model would permit refutation of the null hypothesis. Several other items were found to be significantly related to D%. These were "gets along well with others" (33: r = -.45) and "tries to be a 'brain'" (37: r = .34), and there is the possibility that these items reflect the perception of overcritical individuals by the group. Hypothesis 4 is worthy of further investigation.

Of the two hypotheses for Dd%, Hypothesis 5, Dd% as related to an overconcern for detail was not supported in the null form, while Hypothesis 6, Dd% related to artistic responsiveness and a sense of the unusual was supported; the relationships with the hypothesized items were not found to be significant. However, as in Hypothesis 4, a refinement of the statistical design might permit the refutation of Hypothesis 6.

To determine a particular independent interpretation for Dd% is difficult because of the variety of responses that make up this score. Dd% was also found to be significantly related to "ideas he contributes
to discussion are not clear" (8: r=. 36), "tries to be a "brain"" (37: r=. 42), "argues a lot" (39: r=. 48) and "goes along with the group" (60: r=-. 37). The latter three relationships may be due to the variance of the space response (S), which is included in the computation of Dd%.

This seems particularly likely to be the case in view of the clear refutation of Hypothesis 7, S as related to oppositional tendencies, intellectual aggressiveness, or a sense of the unusual.

To the contrary, Hypothesis 8, S as related to self-critical behavior was upheld. A further significant relationship was found between S and "is fussy about details" (3: r=. 49) but did not appear to be particularly relevant to either hypothesis.

It is possible to design a more sensitive test of the white space hypotheses and, in view of the results above, such an investigation is indicated.

Hypothesis 9, M as related to creative and intellectual capacities and maturity, was not upheld.

Further items found to be related to M were the following:

1. is an organizer (r=. 34)

3. is fussy about details (r=. 39)

14. is down in the dumps most of the time (r=-. 35)

38. has ideas that are easy to understand (r=. 54)
43. has a lot of ideas (r = .44)
44. has trouble growing up (r = -.34)
49. is a tactful person (r = .38)
54. accomplishes a lot (r = .41)
55. uses "common sense" (r = .42)

It will be seen from the table of item intercorrelations (Appendix II) that these are all related items, and most could be seen as further support for the idea of M being related to mature, creative, and intellectual behavior.

Hypothesis 10, relating M to excessive fantasy activity was supported in the null form. Apart from the possibility that this is not a valid interpretation for M, a more sensitive test might involve analysis of the content of the movement responses, and also might involve a population of subjects in which excessive fantasy would be more visible.

The support of Hypothesis 11, FM as related to immaturity and acceptance of biological urges, was indicated by the relationships obtained with the hypothesised items. However, with respect to the Item "likes to tell dirty stories" (6: r = .30), a refinement of the statistical model and the introduction of more sensitive items might well bring about a refutation of the null hypothesis for "acceptance of biological urges." Further, it is questionable to what degree a group
of adolescents is able to evaluate each individual in terms of immaturity.

FM was found to be significantly related to the Items "is practical" (2: $r = -.40$) and "is bubbling with energy: is never still" (52: $r = .34$) which underscores the need for the further investigation of hypotheses relating FM to observable behavior.

Hypothesis 12, as related to inner tension was not upheld in the null form. The meaning proposed by Klopfer of $m$ as a "danger signal" pointing toward the existence of a conflict between the individual's worlds of fantasy and reality is further enhanced by the significant relationships found between $m$ and the following Items:

8. ideas he contributes to discussion are not clear ($r = .37$)
13. bothers people ($r = .50$)
15. is a good friend ($r = -.39$)
18. is able to handle most situations ($r = -.68$)
33. gets along well with others ($r = -.82$)
38. has ideas that are easy to understand ($r = -.47$)
39. argues a lot ($r = .56$)
49. is a tactful person ($r = -.37$)
51. is liked by most people ($r = -.53$)
54. accomplishes a lot ($r = -.51$)
56. is a mature person ($r = -.70$)
60. goes along with the group \( (r=-.70) \)

These items appear to depict well the results of the autistic behavior of the individual who is at odds with himself.

The test of \( k \) as related to intellectualized anxiety, Hypothesis 13, was not supported in the null form. Further items found significantly related to \( k \) were "argues a lot" \( (39: r=.45) \), "is stubborn" \( (48: r=.47) \), "is easily angered" \( (53: r=.39) \), and "goes along with the group" \( (60: r=-.45) \).

It seems appropriate to interpret these items in terms of the behavior of the anxiously intellectualizing individual as seen by the group.

Hypothesis 14, \( k \) as related to unsystematized anxiety, was clearly not supported in the null form.

The determinant \( K \) was the most productive of relationships with the items of all the Rorschach variables examined, in terms of the number of relationships found, probably because a great many of the items can be interpreted as behavior indicative of unsystematized anxiety. The items with their respective correlations with \( K \) are the following:

1. is an organizer \( (r=-.41) \)
2. is practical \( (r=-.47) \)
13. bothers people \( (r=.54) \)
15. is a good friend \( (r=-.51) \)
16. is the life of the party (r = -.43)
17. believes anything you tell him (r = .34)
18. is able to handle most situations (r = -.60)
24. is immature (r = .55)
28. is very self-conscious (r = .55)
31. can't keep his hands off you (r = .45)
33. gets along well with others (r = -.52)
35. is easily led (r = .35)
38. has ideas that are easy to understand (r = -.48)
41. thinks before acting (r = -.46)
43. has a lot of ideas (r = -.36)
44. has trouble growing up (r = .39)
49. is a tactful person (r = -.35)
51. is liked by most people (r = -.51)
54. accomplishes a lot (r = -.40)
55. uses "common sense" (r = -.47)
56. is a mature person (r = -.47)
58. has an "inferiority complex" (r = .48)

Since these items represent not only attempts at objective judgement by the subjects, but also their subjective impressions of the rated student, the pattern may possibly be interpreted as showing the disruptive effects of unsystematized anxiety on social interaction and
acceptance.

The test of FK as related to behavioral signs of control and self-consciousness indicated that null Hypothesis 15 was not upheld. One further item was found to be significantly related to FK: "is afraid to be friendly" (50: \( r = .34 \)). and there is the possibility that it is a function of the way a self-conscious person is seen by the group.

Hypothesis 16, \( F\% \) as related to control, was found to be supported in the null form. The one item of the 60 found to be related to \( F\% \) was "is very self-conscious" (28: \( r = -.34 \)) which does not appear to be meaningful in terms of a "control" hypothesis.

However, this finding is not a refutation of Klopfer's interpretation of \( F\% \), in which \( F_c \) and FK are taken into account, and where the interpretations of "rigidity" or "overcontrol" are applied only when \( F \) exceeds 50\% of all responses (although this figure does sound a bit arbitrary). A more sensitive test of the meaning of \( F \) would involve taking \( F_c \) and FK into account, and perhaps would lead to the location of an empirical "cutting point" beyond which a particular interpretation or hypothesis could be assigned to \( F \), the form determinant, but such an evaluation was felt to be beyond the scope of the present investigation.

Hypothesis 17, \( F_c \) as related to social sensitivity or control was
not supported in the null form. In addition, the following items were found to be significantly related to \( Fc \):

3. is fussy about details \( (r = .53) \)

6. likes to tell dirty stories \( (r = -.36) \)

16. is the life of the party \( (r = -.47) \)

19. shows off by using big words \( (r = .40) \)

20. is a plodder \( (r = .52) \)

37. tries to be a "brain" \( (r = .57) \)

39. argues a lot \( (r = .39) \)

50. is afraid to be friendly \( (r = .38) \)

52. is bubbling with energy: is never still \( (r = -.34) \)

The determinant \( Fc \) is related to a constellation of items that might be interpreted as reflecting intellectualized anxiety and aggressiveness, although Item 20 might be cause to question the latter possibility. Also the negative relationships found between \( Fc \) and Items 6, 16, and 52 appear to be in support of Klopfer's more specific hypothesis that \( Fc \) is related to over-refinement or "properness."

Hypothesis 18, as related to contact needs, was not tested, as mentioned earlier.

Of the two hypotheses for the determinant \( C' \), Hypothesis 19 relating \( C' \) to artistic sensibilities and Hypothesis 20 relating \( C' \) to
mood swings and emotional depression, only Hypothesis 20 was found to be unsupported in the null form. Other items found to be related to C1 were:

3. is fussy about details ($r = .48$)
6. likes to tell dirty stories ($r = -.42$)
21. is overcritical of others ($r = .44$)
26. is preoccupied ($r = -.46$)
37. tries to be a "brain" ($r = .44$)
53. is easily angered ($r = .42$)

With the possible exception of Item 26, all of these might be seen as related to mood swings, but such inference may be open to question. There is clearly a need for "fresh" hypotheses for the meanings of C1.

Hypothesis 21, relating FC to behavior indicative of emotional adjustment to outer reality, was not found to be supported.

A large number of other items were found to be significantly related to FC:

1. is an organizer ($r = .43$)
3. is fussy about details ($r = .64$)
4. comes up with unusual ideas ($r = .44$)
5. has a good imagination ($r = .37$)
19. shows off by using big words ($r = .36$)
21. is overcritical of others \((r = .61)\)
24. is immature \((r = -.43)\)
27. doesn't trust his own ideas \((r = -.36)\)
29. always has to have his own way \((r = .50)\)
34. is irritable \((r = .36)\)
36. gets things done \((r = .37)\)
37. tries to be a "brain" \((r = .44)\)
40. is artistic \((r = .59)\)
43. has a lot of ideas \((r = .43)\)
44. has trouble growing up \((r = -.45)\)
59. "gets up on the wrong side of the bed" \((r = .41)\)

Referring to Table 21, it may be that the failure of the items dealing with interpersonal relationships is a result of the criteria used by members of the group in choosing friends and in evaluating interpersonal relationships. As the data stand, however, FC appears to be related only to general "outgoing" behavior, which nevertheless serves to refute the null hypothesis.

The hypothesis relating CF to spontaneity or impulsivity, Hypothesis 22, was supported. Further, not one of the 60 items was found to be related to CF. Since significant relationships were found between the items and FC and C, it seems likely that CF, as another color determinant, should also be related to observed be-
behavior in some way. One possible reason for the support of the null hypothesis in this instance may be related to the age of the subjects. Spontaneity and mild impulsivity may constitute a behavioral norm.

Hypothesis 23, relating C to an absence of control over responsiveness to external stimuli, was not supported in the null form. Other items found to be significantly related to C are as follows:

1. is an organizer (r = -.38)
4. comes up with unusual ideas (r = -.42)
8. ideas he contributes to discussion are not clear (r = .46)
9. can't make up his mind (r = .50)
10. is too concerned about his own behavior (r = .39)
18. is able to handle most situations (r = -.54)
24. is immature (r = .34)
27. doesn't trust his own ideas (r = .52)
28. is very self-conscious (r = .39)
36. gets things done (r = -.41)
38. has ideas that are easy to understand (r = -.44)
43. has a lot of ideas (r = -.49)
45. seems unsure of himself (r = .49)
49. is a tactful person (r = -.34)
55. uses "common sense" (r = -.34)
58. has an "inferiority complex" (r = .39)
These items may be interpreted as supporting the picture of the suggestible adolescent as seen by his peers.

While the null hypothesis was not supported for 12 of the 22 Rorschach variables that were tested, pointing toward relationships between the variables and these particular behavioral constructs, the possibility that the relationships are not specific must be considered.

An inspection of all of the correlations between the Rorschach variables and the items (Appendix II) revealed that infrequently used variables such as C or K correlated with a large number of the items, while frequently used variables, such as F, W or D correlated with few of the items.

Since the population of subjects was a clinically "normal" group of above average intelligence, there is the possibility that the relationships found may be attributed to the level of form accuracy, since the variables C and K involve a minimal use of form. For this reason an alternative interpretation of the results might be that individuals using poor form are more easily identified by their peers in a population where good form is the usual mode of response. This possibility demands further investigation.

In view of the controversial data available on the validity of specific Rorschach variables, it was decided originally to test hypotheses concerning the variables in the null form. For this reason, a
"one-tailed" test of significance could not be employed, since such a test implies positive findings and cannot be used to refute the null hypothesis.

A further refinement that could be employed in further studies of this type would be to present the statements of behavior hypothesized for the Rorschach variables to the subjects and to have the subjects specify observable behavior patterns that they might see as being related to the statements of behavior. From this aggregation of data, the most frequently used statements of observable behavior could then be used as a scale or check-list with which the same group of subjects could then evaluate each other in terms of their own perception of what constitutes relevant behavior for a given Rorschach hypothesis. The subjects, of course, would not be informed of the intent of the investigation.
V. SUMMARY AND CONCLUSIONS

To evaluate specific hypotheses as proposed within Klopfer's system of Rorschach interpretation, three judges drew up 60 statements about behavior in an attempt to relate the personality constructs hypothesized as underlying the Rorschach variables to behavior that could be observed or inferred by intelligent adolescents.

A complete individual Rorschach test was administered to each of 34 subjects, the entire 11th grade of the Ohio State University School, and following this, the 60 items were administered to the subjects in the form of a check-list. At this time the subjects attempted to identify each other in terms of the behavior patterns listed.

The Rorschach tests were scored and checked by the writer and the check-list data were tabulated and checked by an independent worker. The variable used from the check-list was the number of times a given student was identified by his peers as exhibiting the behavior stated by a particular item, while the Rorschach variables consisted of the location scores and the determinants, which were used as scores or percentages, depending upon standard usage. To permit evaluation of the "additional" responses, they were counted as having one-half the value of "main" responses.

Pearson product-moment correlations were computed between the Rorschach variables and all items, and among all items.
The null hypothesis was upheld for 10 of the 22 Rorschach variables that were tested, as is shown in Table 24.

Table 24

Decisions on the Null Hypotheses for the Rorschach Variables

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variable</th>
<th>Construct</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>W</td>
<td>Overintellectualization</td>
<td>Upheld</td>
</tr>
<tr>
<td>2.</td>
<td>O # W</td>
<td>Organizational ability</td>
<td>Refuted</td>
</tr>
<tr>
<td>3.</td>
<td>D%</td>
<td>Practicality</td>
<td>Upheld</td>
</tr>
<tr>
<td>4.</td>
<td>d%</td>
<td>Criticism</td>
<td>Upheld</td>
</tr>
<tr>
<td>5.</td>
<td>Dd%</td>
<td>Overconcern for details</td>
<td>Refuted</td>
</tr>
<tr>
<td>6.</td>
<td>Dd%</td>
<td>Artistic responsiveness</td>
<td>Upheld</td>
</tr>
<tr>
<td>7.</td>
<td>S</td>
<td>Oppositional tendencies</td>
<td>Refuted</td>
</tr>
<tr>
<td>8.</td>
<td>S</td>
<td>Self-criticism</td>
<td>Upheld</td>
</tr>
<tr>
<td>9.</td>
<td>M</td>
<td>Creative and intellectual</td>
<td>Refuted</td>
</tr>
<tr>
<td>10.</td>
<td>M</td>
<td>Excessive fantasy</td>
<td>Upheld</td>
</tr>
<tr>
<td>11.</td>
<td>FM</td>
<td>Immaturity and acceptance of biological urges</td>
<td>Upheld</td>
</tr>
<tr>
<td>12.</td>
<td>m</td>
<td>Inner tension</td>
<td>Refuted</td>
</tr>
<tr>
<td>13.</td>
<td>k</td>
<td>Intellectualized anxiety</td>
<td>Refuted</td>
</tr>
<tr>
<td>14.</td>
<td>K</td>
<td>Unsystematized anxiety</td>
<td>Refuted</td>
</tr>
<tr>
<td>15.</td>
<td>FK</td>
<td>Control and self-conscious</td>
<td>Refuted</td>
</tr>
<tr>
<td>16.</td>
<td>F%</td>
<td>Control</td>
<td>Upheld</td>
</tr>
<tr>
<td>17.</td>
<td>Fc</td>
<td>Control and social sensitivity</td>
<td>Refuted</td>
</tr>
<tr>
<td>18.</td>
<td>c</td>
<td>Contact needs</td>
<td>Not tested</td>
</tr>
<tr>
<td>19.</td>
<td>C'</td>
<td>Artistic sensibilities</td>
<td>Upheld</td>
</tr>
<tr>
<td>20.</td>
<td>C'</td>
<td>Mood swings and depression</td>
<td>Refuted</td>
</tr>
<tr>
<td>21.</td>
<td>FC</td>
<td>Adjustment to reality</td>
<td>Refuted</td>
</tr>
<tr>
<td>22.</td>
<td>CF</td>
<td>Spontaneity or impulsivity</td>
<td>Upheld</td>
</tr>
<tr>
<td>23.</td>
<td>C</td>
<td>Suggestibility</td>
<td>Refuted</td>
</tr>
</tbody>
</table>
Since construct validation involves the accumulation of evidence from a number of investigations, the construct validation of the Rorschach will not be claimed here. However, it seems safe to conclude that this investigation contributes toward an understanding of the relationships between some of the Rorschach constructs and independently defined aspects of personality.

It may further be concluded that this investigation is a methodological contribution, since it has shown that relationships can be found between peer judgments and scorable Rorschach variables, when the latter are obtained under standard conditions.
Bibliography


Appendix I

On another occasion you were asked to describe how students ought to behave. Now you are being asked how particular students do behave.

The information you are giving will be confidential, so please try to be as accurate and honest as possible. Please do not write your name on this paper.

Read each statement carefully, and if you feel that it describes the way acts, put a check mark ( ) in the space provided at the end of the statement.

1. Is an organizer ( )
2. Is practical ( )
3. Is fussy about details ( )
4. Comes up with unusual ideas ( )
5. Has a good imagination ( )
6. Likes to tell dirty stories ( )
7. Gripes to his friends but doesn't tell the group ( )
8. Ideas he contributes to discussion are not clear ( )
9. Can't make up his mind ( )
10. Is too concerned about his own behavior ( )
11. Has a tight grip on his feelings ( )
12. Is a sensitive person ( )
13. Bothers people ( )

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14. Is "down in the dumps" most of the time ( )
15. Is a good friend ( )
16. Is the life of the party ( )
17. Believes anything you tell him ( )
18. Is able to handle most situations ( )
19. Shows off by using big words ( )
20. Is a plodder ( )
21. Is overcritical of others ( )
22. Is a reckless driver ( )
23. Is a dreamer ( )
24. Is immature ( )
25. Can't let himself go ( )
26. Is preoccupied ( )
27. Doesn't trust his own ideas ( )
28. Is very self-conscious ( )
29. Always has to have his own way ( )
30. Is suspicious of other people ( )
31. Can't keep his hands off you ( )
32. Is moody ( )
33. Gets along well with others ( )
34. Is irritable ( )
35. Is easily led ( )
36. Gets things done ( )
37. Tries to be a "brain" ( )
38. Has ideas that are easy to understand ( )
39. Argues a lot ( )
40. Is artistic ( )
41. Thinks before acting ( )
42. Tries to win approval ( )
43. Has a lot of ideas ( )
44. Has trouble growing up ( )
45. Seems unsure of himself ( )
46. Worries a lot ( )
47. Can't accept compliments or praise gracefully ( )
48. Is stubborn ( )
49. Is a tactful person ( )
50. Is afraid to be friendly ( )
51. Is liked by most people ( )
52. Is bubbling with energy: is never still ( )
53. Is easily angered ( )
54. Accomplishes a lot ( )
55. Uses "common sense" ( )
56. Is a mature person ( )
57. Acts tense ( )
58. Has an "inferiority complex" ( )
59. "Gets up on the wrong side of the bed" ( )
60. Goes along with the group ( )
Autobiography

I, Robin James Clyde, was born in Arlington, Washington, June 6, 1926. I received my secondary school education in the public schools of Everett, Washington. My undergraduate training was obtained at the State College of Washington, from which I received the degree Bachelor of Science in 1948. From the Graduate School of the State College of Washington I received the degree Master of Science in 1951. Upon completion of the requirements for the degree Master of Science I served for one year as Assistant Psychometrist in the Student Counseling Center of the State College of Washington. During the years 1951-53 I served as Counselor in the Student Counseling Bureau of the University of Minnesota. While in residence at The Ohio State University, I served for a year as Assistant Psychologist at the Ohio State Rehabilitation Center, for a year as Research Assistant to Dr. H. B. Pepinsky, and for nine months as Teaching Assistant to Dr. Emily L. Stogdill, while completing the requirements for the degree Doctor of Philosophy.