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ABSTRACT

Teachers in a private special education school for students with learning and/or adjustment difficulties completed Bristol Social Adjustment Guides (BSAGs), an observation scale for identifying maladaptive classroom behaviors, for 157 students (7-21 years old). Rorschachs were administered to the same group of students. Data from each test were reduced via factor analyses, and factor structures were chosen which demonstrated both statistical consistency and psychological integrity. Standardized factor scores were subjected to a series of canonical correlations to determine degree of common variance. Zero-order correlations were computed among relevant BSAG, Rorschach, and background variables. Finally, a series of multiple-discriminant analyses were conducted comparing hit-rates for correctly classifying students by special education category and psychiatric diagnosis. No significant canonical correlations were found between Rorschach and BSAG factors. However, both sets of factors extracted appeared unique for this sample. Inclusion and exclusion of certain Rorschach variables were consistent with current research. Discriminant analyses revealed that the BSAG and Rorschach had comparable hit rates (53%) in correctly classifying students by special education category. While Rorschach contents and determinants were most accurate when categorizing students in terms of psychiatric diagnosis, potential use of Rorschach and observation data in the derivation of all of these categories could have confounded findings. (Author/CL)

BEHAVIOR CORRELATES OF RORSCHACH RESPONSE IN SCHOOL AGE CHILDREN

Frances G. Martin

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ABSTRACT

BEHAVIOR CORRELATES OF RORSCHACH RESPONSE IN SCHOOL AGE CHILDREN

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Dr. Paul A. McDermott, Dissertation Chairman

Statement of Problem

The need to assess personality functioning for children being considered for special education placement is as controversial as the means for doing so. School psychologists appear to rely on an array of instruments ill suited for this task. While phenomenologically based behavior observations present a viable alternative, they can be limited in their scope, inaccurate to the degree that judgments are required and bound to the specifics of both context and observer. Little is presently understood of the relationship between behavior profiles expressed in the classroom and personality variables expressed as responses to the Rorschach inkblots.

Procedures and Methods

Teachers in a private special education facility completed Bristol Social Adjustment Guides (BSAGs), an observation scale

for identifying maladaptive classroom behaviors, for 157 student volunteers. Rorschachs were administered to the same group of students. Data from each test were reduced via factor analyses, and factor structures were chosen which demonstrated both statistical consistency and psychological integrity. Standardized factor scores were subjected to a series of canonical correlations to determine degree of common variance. Zero-order correlations were computed among relevant BSAG, Rorschach, and background variables. Finally, a series of multiple-discriminant analyses were conducted comparing hit-rates for correctly classifying students by special education category and psychiatric diagnosis.

Results

No significant canonical correlations were found between Rorschach and BSAG factors. However, both sets of factors extracted appeared unique for this sample. Inclusion and exclusion of certain Rorschach variables were consistent with current research. Discriminant analyses revealed that the BSAG and Rorschach had comparable hit rates (53%) in correctly classifying students by special education category. While Rorschach contents and determinants were most accurate when categorizing students in terms of psychiatric diagnosis, potential use of Rorschach and observation data in the derivation of all of these categories could have confounded findings.

Conclusions

Results of this study supported the notion that the frequency distributions of sample specific factor scores for instruments such as the BSAG and Rorschach can be appreciably different from norms posited. The utility of a factorial approach to Rorschach interpretation was explored, and the need to solidify methods of classifying children articulated. Alternative methods for identifying and examining relationships between Rorschach data and observable behaviors were offered.

DEDICATION

This paper is dedicated to the men in my life,

my father, my husband, and my sons,

without whose encouragement, love and

limitless support its completion

would not have been possible.

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There are several indviduals whose support and assistance were instrumental in the completion of this research. First, I wish to thank the staff and students of Wordsworth Academy who willingly provided the data for this project. In particular, Dr. Bernard Cooper, Director of Wordsworth, with his permission to permit research in his school, provided the groundwork for this study to take place. Mr. Michael Curcio, Educational Director, was encouraging and extremely accomodating, making both background and current test data available to me, serving as liaison with his teachers, and lending me his excellent administrative staff. I am especially grateful to Mrs. Pauline Rice, for her assistance, warmth and companionship as I actually conducted this study.

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My dissertation committee also deserves special mention. Dr. Andrew Baggaley has provided astute feedback concerning both methodology and editorial style. Dr. Helen Felsenthal's comments have consistently helped me focus this project to best address concerns of teachers, students and other school personnel for whom it was ultimately conducted. Their input has clearly enhanced the quality of this report. In addition, Dr. Pamela Pressley Abraham, my outside committee member, has taught me so much about the Rorschach and the psychology of personality. Her insights and expertise have helped make this a stimulating and exciting experience.

My dissertation chairman and advisor, Dr. Paul McDermott by encouraging me to become a knowledgable iconoclast provided the underlying impetus for this study. He accepted my interest in the Rorschach, and nurtured my need to know in such a way that this project emerged. He has taught me to question and to think; he provided guidelines for conducting sound and meaningful research which I have endeavored to emulate.

The efforts of all of these individuals, have not only made the completion of this dissertation possible, but have permitted me the opportunity to enjoy the process and learn from it as well. My thanks are extended to all.

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CHAPTER I

Introduction

Personality assessment in our schools is a subject of great controversy. School psychologists agree that the evaluation of a child's needs for special education services must involve more than presentation of an IQ score. In order to develop appropriate and individualized educational prescriptions, specific classroom behaviors must be described and compared with a baseline of acceptability. In addition, broader aspects of personality style need to be clearly defined and understood in terms of their impact on school performance. Effective means for achieving these goals appear to be lacking at the present time.

Personality can be understood as those behavioral and emotional tendencies characterizing an individual. It is reflected in one's attitudes, one's approach to new, different or familiar situations, one's manner of relating to others, and one's response to a variety of stimuli. It includes habits, moods, likes, dislikes, motivators, and how a person learns. Evaluating personality can be as complex and elusive as defining it can be.

Compounding the matter is the question of whether personality is best assessed through projective

instrumentation, or a more phenomenological and descriptive approach. Not only are projective methods criticized as being too inferential in nature, based on hypothetical constructs lacking behavioral concomitants, but school psychologists appear to rely upon an array of instruments, neither designed nor well validated for meaningfully describing personality at all. High on the list of several surveys of techniques used in schools to understand broader personality function among children, for example, is the Bender-Gestalt, a test of perception, without validation for assessing emotional function (Elkund, 1980, Note 1; Johnson and Cini, 1983, Note 2; Koppitz, 1975; Vukovich, 1983).

Behavior assessment, on the other hand, better meets the requirements of describing specific response patterns characteristic of dysfunctional classroom behavior (Ciminero, 1977). Personality here is understood as it is reflected in those patterns of behavior considered unacceptable. However, many behavior rating scales also require inference by the observer: does this behavior occur frequently, infrequently, or not at all? Determining whether a child has <u>feelings of inferiority</u>, expresses <u>bizarre</u> behaviors, or acts <u>inappropriately</u> is complicated not only by how different individuals might define such phenomena, but also by the context in which said behaviors are observed. Literature on human judgment abounds with evidence that our ability to answer

these types of questions reliably is extremely limited (Meehl, 1954, 1965; Oskamp, 1965; Trankell, 1959; Weitman, 1962). Hook and Rosenshine (1979) summarized 11 studies of teacher reports of their classroom behavior and concluded, "Of the studies containing data on the correspondence between teacher reports of specific behaviors and observational data on the same behaviors, not one found a clear relationship between the two." (p.5). They found that when outside investigators grouped reports and observations into scales or dimensions of behavior, there was some correspondence but no clear relationship between specific groupings and actual occurrences.

It appears that when the need for interpretation or inference is limited, accuracy of both observations and personality descriptions can increase. Though historically used as a projective technique, the Rorschach Inkblot Test is presently gaining broader acceptance as a test of perception, that is, a reflection of personality expressed in a group of behaviors (Exner, 1983; Weiner, 1984, Note 3). Viewed as a problem solving task, the Rorschach can provide meaningful information concerning an individual's cognitive-perceptual approach or style of behaving. Current research has established both the reliability of Rorschach scores and the validity of certain hypotheses derived from them (Exner, 1969, 1972; Exner and Weiner, 1982, Weiner, 1984, Note 3). By eliminating the aura surrounding projective techniques and

their application to evaluating the psychological status of individuals, hypothetical leaps based on psychodynamic inference have by definition been markedly reduced.

Similarly, the Bristol Social Adjustment Guides (Stott, 1972) were developed from teacher descriptions of behaviors. The instrument is phenomenological in nature, requiring notation of either the presence or absence of a particular behavior. Little interpretation is required on the part of the observer. Behaviors considered acceptable and appropriate for the classroom as well as those considered maladaptive, reflecting a child's actions against his or her own best interests, are included. As a result the BSAG can provide more valid and meaningful information concerning specific behaviors exhibited in a classroom setting than many other instruments available.

When children are evaluated by a school psychologist to aid in the determination of the most appropriate educational setting and plan, emotional factors, learning strengths and weaknesses and classroom behaviors must all be considered. While clinical psychologists may use the Rorschach as a tool permitting a better understanding of personality, they must rely upon inference and a large body of contradictory evidence to make recommendations concerning appropriate educational programming. School psychologists, on the other hand, rely on instruments far less reliable and valid than the Rorschach to

understand personality, yet they also have at their disposal valuable observations of a child's actual performance in the specific setting in question. The inter-relatedness of these types of information is unclear at present, however. In the absence of verifiable data concerning the correspondence between information derived from personality assessment, and that derived from observations of classroom behavior, the efficacy of remedial and prescriptive school programs is seriously limited.

Based on the hypothesis that an individual's personality is expressed comparably in a variety of situations, the present study was designed to examine the reciprocal validity between two modes of assessment, with regard to both utility and applicability to school settings. It was predicted that a significant proportion of common variance could be identified, characterizing the relationship between observations generated from The Bristol Social Adjustment Guides, a phenomenologically based behavior rating scale developed specifically for classroom use, and observations rendered from the Rorschach Inkblot Test administered and scored as an assessment of perceptual-cognitive style, without the use of interpretations of a psychodynamic or hypothetical nature. In applying sophisticated methods of multivariate statistical analysis, it was believed that the complexity of personality as it is reflected in behaviors could be preserved and addressed.

Individual Rorschach scores were considered observations of individual behaviors, as were the behavioral statements of the BSAG. For each test, observations were systematically reduced using correlational and factor-analytic techniques. Once factorial integrity was established, canonical correlation was applied to test the relationship between behavioral factors derived from BSAG data and those developed from Rorschach scores.

In this manner it was hoped that profiles could be developed integrating how a child behaves in the classroom, with broader descriptions of personality states and traits identified via Rorschach data. Preliminary steps were to be taken toward filling the need for an instrument assessing personality, validated specifically for the context in which its results will be applied. Knowledge of specific behavioral correlates of groups of Rorschach data could provide educators with important information critical to the development of optimal and individual educational programs for handicapped school children expressing emotional disturbances as well as specific learning difficulties.

CHAPTER II

Review of Literature

The Rorschach.

Despite criticisms that it is statistically unsound, lacking in basic properties of validity and reliability, the Rorschach inkblot test is considered to be an indispensible tool by many professionals engaged in clinically-oriented assessment. The Rorschach ranks highest among tests most frequently recommended that clinical psychology students learn to administer (Wade, Baker, Morton, & Baker, 1978). After surveying assessment practices in APA-approved clinical graduate programs, Ritzler and DelGaudio (1976) found that 81% of respondents placed major emphasis on the Rorschach in the assessment courses offered. In addition, Lubin, Wallis, and Paine (1971) reported that 91% of 251 clinical facilities use the Rorschach on approximately 60% of their patients.

The availability of norms for children of differing ages, levels of intelligence, socioeconomic status, and behavioral descriptors (Ames, Metraux, Rodell, & Walker, 1974; Exner & Weiner, 1982; Levitt & Truumaa, 1972; Thetford, Molish, & Beck, 1951) has enhanced the potential applicability of the Rorschach. Clinically it is used as a measure of perceptual development (Palmer, 1970) and to distinguish adjusted from

apparently maladjusted children (Kessler, 1966). Children's Rorschachs have also contributed to diagnostic decision making, particularly when there is a question of degree of psychopathology involved.

Siegel (1948) found close agreement between diagnoses based on children's Rorschachs and those formulated by a psychiatrist after a period of psychotherapy. Ilg, Ames, and Apell (1965) successfully applied the Rorschach as a part of a battery of tests used to predict school readiness for kindergarten, first-, and second-grade children. In a test-retest study of a group of emotionally disturbed children in residential treatment, Kessler and Wolfenstein (1953) found close correspondence between behavioral change noted by residential staff and changes reflected in the Rorschach. Kessler (1966) summarized research with the Rorschach and children positively.

> The child reveals, in this test, many of the same personality characteristics which he reveals in life situations. It is an invaluable research tool, also, because it provides a frame of reference within which particular personality characteristics of different children, or of the same child at different times, can be compared (p. 81).

The Rorschach is based on the notion that the manner in which this individual organizes and ascribes meaning to a set of non-specific forms (inkblots) reflects the manner in which an individual organizes and interprets life experience in general. It can potentially provide information concerning a

subject's emotions, motivations, and mode of approaching and interacting with the world. If personality is defined as a pervasive or underlying perceptual-cognitive style reflected in an individual's behavior patterns and affective responses to the world, the Rorschach can be considered a means of assessing one's personality. Thorough examination of not only what a person perceives in the Rorschach inkblots but also how such percepts are expressed, "reveals many ways in which the individual perceives his psychosocial relationships and the degree and manner in which he overtly and directly acts to establish, maintain, and influence his relationships with others," (Piotrowski, 1974, p. 9).

Applications of traditional statistical methods to the Rorschach have been fraught with methodological problems. Cronbach (1949) described Rorschach studies as more prone to inflation of significance reported than other research because of the great number of scores used, variable interdependence of scores, and the dependence of scores on the total number of responses. Regression formulas have traditionally not been cross-validated (Harris & Christiansen, 1946; Hertzman, Orlansky & Seitz, 1944; Montalto, 1946; Ross & Ross, 1944), and often hundreds of comparisons have been made before a selected few are reported as significant at an alpha level of .05 (Piotrowski, et al., 1944; Rapaport, 1946). This latter practice is extremely misleading because the proportion of

significant ratios to be found by chance alone when numerous comparisons are made is not accounted for. The use of ratios or percentage scores (F%, W%, M%) has been criticized as unreliable and based on an erroneous assumption of equivalence. Furthermore, bivariate correlational methods have been found to underestimate strength of association when one or both variables have sharply skewed distributions, rendering the relationships curvilinear (Cronbach, 1949).

Frequently cited as a prototype of clinical assessment, the Rorschach has been severely criticized, primarily by proponents of more actuarial methodologies (Gough, 1963; Meehl, 1954, 1973).

> There is a lack of theory in the Rorschach field to explain why it seems to 'work.' There are variations in methods of administration, scoring, and interpretation (lack of standardization) which would account for the innumerable variations in results, and which would prevent the accumulation of normative evidence which could be applicable within specific clinical situations. There are difficulties in demonstrating the reliability of the Rorschach despite what might appear to be high objectivity and reliability in the hands of experienced and skilled clinicians. And, above all, evidence for validity of the instrument is inadequate (Zubin, Eron & Schumer, 1965, p. 174-175).

Though these at first glance may appear to be insurmountable problems, providing sufficient negative evidence regarding the Rorschach to discontinue its use (Meehl, 1973), a careful review of the literature sheds more positive light on this controversial technique.

Addressing the general issue of clinical vs. actuarial

prediction, Holt (1970) argued that even the most empirical systems of assessment rely on clinical judgment to some degree. He pointed to numerous flaws in Meehl's (1954, 1957, 1965) evidence against the utility of clinical assessment. The inadequacy of criterion measures, often crude and heterogeneous rather than sufficiently specific, is often mentioned first. This is compounded by criterion contamination stemming from the absence of cross-validation samples, small numbers of subjects limiting potential generalizability, and the use of quantitative data only, when the complexity of predicting human behavior unquestionably calls for the inclusion of qualitative information as well. Furthermore, Meehl's classification of judges as "clinician" was found to be misleading, with only 22 of 45 studies cited based on the judgment of psychologists or psychiatrists, the remainder using military officers, graduate students, and even the subjects themselves.

Weiner (1972, 1983) described clinicians' use of psychological tests such as the Rorschach as facilitating personality description and appraisal of personality processes in general. Citing Lewin's formula, Behavior = f(Personality, Environment), Weiner proposed that clinicians are concerned primarily with personality variables, and as such are not trying to directly predict behaviors. It is only with information pertaining to key situational variables, most closely linked with the personality processes being assessed,

that meaningful steps toward prediction can be taken. Holt (1970) concluded that clinicians are skilled in "assessing personality by largely subjective but partly objectifiable procedures, making use of theories that permit a deeper and more valid understanding of persons than anything statisticians can provide," (p. 348).

In sum, Cronbach (1949) offered several suggestions for comparing groups using the Rorschach and for dealing with Rorschach data in general. He advocated the use of frequencies rather than additive scores because they are free from assumptions about scale units, and he recommended analyses utilizing the median rather than the mean for this reason. However, many of his recommendations address research integrating long-standing clinical assumptions concerning the Rorschach and its ability to distinguish between groups. Thus, he also applied univariate procedures and bivariate procedures such as chi-square and biserial r. Given the complexity of human personality and the complexity of the Rorschach, multivariate procedures might immediately address some of the aforementioned problems. The rule of parsimony can more appropriately be applied as fewer analyses are necessary to treat large amounts of data. Factor analysis comes to mind as a means of actuarially reducing such volumes of data into more psychologically meaningful and statistically viable units.

Reliability of the Rorschach. An argument used by

clinicians to hold proponents of a more actuarial approach at bay is the notion that prediction is only a means and not an end in itself. The aim of a science, rather, is explanation through understanding. The Rorschach may be a valuable tool for understanding people and as such can provide substantial information regarding personality. Any test, however, must have demonstrable reliability and validity before it can be considered an acceptable assessment device (American Psychological Association, 1974).

Evaluating the reliability of the Rorschach has not been a simple matter. Some experts argue that traditional methods of determining reliability are inapplicable because the Rorschach is not a test like other methods. It is viewed, rather as a means of gaining insight into personality (Vernon, 1935) or of describing personality (Symonds, 1949). Holtzman, on the other hand (1959), discouraged by the confusing and often negative results applying quantitative analyses to the Rorschach, described the structure of the test as inherently problematic.

> Providing the subject with only ten inkblots and then permitting him to give as many or as few responses to each card as he wishes characteristically results in a set of unreliable scores with sharply skewed distributions, the majority of which fail to possess the properties of even rank-order measurements (Holtzman, 1959, p. 133).

Though Cronbach (1949) outlined several methods of reducing the impact of the variable number of responses (R) per plate per individual, the lack of linear relationship between R and other

variables (Zubin, et al., 1965) and the finding that this relationship is not constant but varies for different variables (Fiske & Baughman, 1953) only add to the difficulties.

Although the Rorschach is not conducive to division into equally comparable components, several studies exploring the internal consistency of the test have been reported in the literature. Vernon (1933) used the Spearman-Brown prophecy formula to correlate two halves of the Rorschach for 90 subjects. One half contained the responses to cards I, III, V, VI and X, and the other, cards II, IV, VII, VIII and IX. Thus, each portion included blots that were shades of gray, black, and white; black, white, gray, and red; and combinations of pastel colors. He found a high correlation (r = .91) for number of responses (R), but the average correlation of the remaining variables was only .54, suggesting that the two halves were not truly comparable. Hertz (1934) obtained coefficients ranging from .60 for percentage of popular responses to .90 for percentage of anatomy, original, and shading responses, using the split-half method on 100 randomly selected records of junior high school students. Ford (1946) and Wirt and McReynolds (1953) also reported mean correlations in the .80 range. Although it is argued that each of the 10 inkblots constitutes a unique task in itself and by design not necessarily comparable to each of the others, satisfactory levels of internal consistency can obviously be demonstrated

for the Rorschach test.

In exploring temporal consistency of Rorschach variables, one must address the question of whether personality, as captured by the Rorschach test, is indeed a stable phenomena. As personality traits expressed at any given time are a function of both internal and external stimuli, a subject may present a variable self portrait due to natural and expected fluctuations of mood, circumstances, amount of sleep, and so on. This is especially true in the case of younger children, who are undergoing developmental changes as well. The longer the time intervals between testings and the younger the child when originally tested, the greater the variation to be expected in self expression and consequently on the Rorschach (Holzberg, 1960). For a group of preschool children retested after 30 days, Ford (1946) reported reliability coefficients for determinants ranging from .38 to .86. Substantially lower coefficients were reported by Swift (1944) and Kerr (1936) who retested young children after 10-month and one-year intervals. Maturational changes in a children's perceptual-cognitive-affective operations could readily explain such variable results. Indeed developmental differences between 5-year-olds and 7-year-olds would most likely be far greater than differences in development between 13-year-olds and 15-year-olds.

In retesting 6-year-olds after 24 months, Exner (1980)

found only 4 of 19 variables examined to have correlations of .70 or greater. These were Popular response (P), Active movement (M^a), Extended good form (X+%), and Egocentricity Index (3r + (2)/R), (a ratio examining weighted number of reflections, plus pairs, all divided by the total number of responses). Similar findings were reported for 9-year-olds retested over the same interval, the only difference being the inclusion of the Affective ratio (the number of responses offered to plates VIII, IX and X divided by the number of responses to plates I through VII) with a correlation of .79. In contrast, when a group of adults was retested after 36 to 39 months, only Inanimate movement (m) and Sum of grey-black shading (all C') had correlations less than .70 (Exner, Armbruster, and Viglione, 1978). On the other hand, when 25 eight-year-olds were readministered the Rorschach after seven days, Inanimate movement (m), was the only variable with a correlation of less than .70 (r = .49) (Exner, 1980). Seven-year-olds retested after 9 months yielded, similar results to six-year-olds as reported above. However, with nine months between administrations, 15-year-olds were more similar to adults in the resulting correlations. Both Inanimate movement and Sum of grey-black shading had correlations of less than .70, and 15 of the remaining 17 variables had correlations greater than .70. The two exceptions were Passive movement (r = .64) and Experience Potential, the sum of all non-human

movement responses, plus shading and texture responses (r = .64). These findings suggest that while some aspects of perceptual-cognitive functioning found in Rorschach responses appear as quite stable early in life, with increasing age increasing consistency can be demonstrated. The variables and ratios appearing to be least consistent over time have been understood as "state" variables, and include m, sum of shadings, and EP, while the remaining data appear to represent "trait" (more stable) response style activities. These include Human movement responses (M), type of movement response (active or passive), and Chromatic color answers (C). In sum, while more temporal consistency can be found in adult Rorschachs readministered over longer time periods, it can be demonstrated also in children for briefer periods.

A third type of reliability to be addressed is inter-rater reliability. With seven separate systems of Rorschach scoring and interpretation currently in use in this country alone, it is easy to imagine how problems in agreement might arise. Exner and Exner's (1972) survey revealed that 22% of clinicians using the Rorschach do not formally score it, and of those who do, 75% use a combination of systems. In fact, only training and supervision with a particular scoring system can produce a fairly high degree of reliability can be achieved (Zubin, et.al., 1965). Exner developed his Comprehensive System (1974) by integrating aspects of the most widely used

approaches to scoring. He presented clear and concise instructions for administration, including issues of seating, instructions for the test, appropriate questioning techniques and responses to questions of the examinee, presentation of the cards, timing, recording of responses, and guidelines for conducting a brief, nondirective, yet productive inquiry. Insuring a standardized administration, Exner and his colleagues have demonstrated inter-rater reliability coefficients ranging from .95 to 1.0 (Exner & Bryant, 1974).

The reliablity of Rorschach interpretations is not so easily demonstrated. Many undefined steps of inference can take place between a subject's response and an examiner's interpretation. While Exner can rightfully argue that users of his Comprehensive System (Exner, 1974, 1978; Exner and Weiner, 1982) should not fall victim to such criticisms, his own survey (Exner & Exner, 1972) suggests otherwise. Observation of practitioners in the field revealed reliance on interpretations based on such notions as Card IV as father card, card VII as mother card, card VIII as aspiration card, as well as traditionally psychoanalytic interpretations of content (Phillips & Smith, 1953; Rapaport, Gill & Schafer, 1968), or even more idiographic interpretations of content based on the individuals' particular background and history (Aronow & Reznikoff, 1976). Advocates of both research and clinical orientations, however, have agreed that it may be the

qualitative aspects of the Rorschach that are most meaningful (Anastasi, 1976; Fiske, 1959; Piotrowski, 1980, Note 4), yet most difficult to support scientifically.

> For projective techniques, a proper measure of scorer reliability should include not only the more objective preliminary scoring, but also the final integrative and interpretive stages. It is not enough, for example, to demonstrate that examiners who have mastered the same system of Rorschach scoring agree closely in their tallying of such characteristics as whole, unusual detail, or color responses. On a projective test like the Rorschach, these raw quantitative measures cannot be interpreted directly from a table of norms, as in the usual type of psychological test. Interpretive scorer reliability is concerned with the extent to which different examiners attribute the same personality characteristics to the examinee on the basis of their interpretations of the identical record (Anastasi, 1976, p. 579).

The stage of interpreting Rorschach data is that point at which hypotheses are generated concerning an individual's personality, response style, or basic modes of functioning based on quantitative and qualitative aspects of responses offered. Determination of the reliability of such hypotheses among different observers or examiners becomes enmeshed with determining the overall validity of the Rorschach, that is, evaluating exactly what it measures and how well it does so (Anastasi, 1976). While several computer-based methods of interpretation presently exist based on the scoring systems of Klopfer, Exner, and Piotrowski (Century Diagnostics, Inc., 1979; National Computer Systems, 1983; Sidowski, Johnson & Williams, 1980), these have addressed only the issue of consistency of interpretation, not necessarily its validity.

Validity of the Rorschach. "In a very general sense, a test is valid for anything with which it correlates" (Guilford, 1946, p. 428-429). Reviewing Rorschach correlates, however, does not lead easily or directly to an understanding of its validity. Zubin et al. (1965) reiterated the difficulties in choosing which aspects or portions of the Rorschach should be subjected to tests of validity. Many efforts to establish validity have involved exploration of isolated Rorschach variables and the clinical inferences drawn from them. Examples have included the use of color and the expression of affect (Frank, 1976), human movement responses and creativity (Dana, 1968), whole responses and intelligence (Abrams, 1955), and form quality and reality testing (Weiner, 1966) Because of a practice described by Wyatt (1968) as "trait isolation," the inconsistent results reported in these and many other validity studies concerning the Rorschach are not surprising. In general they fail to deal not only with the complexity of the Rorschach as an assessment device but also with the complexity of human behavior.

> The possible interdependence of Rorschach variables, which in some instances is highly complex, makes most of the data derived from trait research studies relatively useless, and the conclusions from these studies questionable or worse. At best, these kinds of data can only be used to formulate new questions, the answers to which might be obtained from research designs more compatible with the complexity of the test itself (Exner, 1974, p. 7).

Meehl (1973) proposed that, principles for making

inferences are actually validated, not the tests themselves. Indeed, many inferences based on Rorschach findings are made about human behavior. These represent a host of theoretical viewpoints, the empirical validity of which remain to be established. Meehl's argument continues that an entire system cannot be validated on the basis of demonstrated validity of a single inference. He cites the hypothesized relationship between low form quality (F+%) and schizophrenia as illustrative of his point. The observation that this relationship appears repeatedly in clinical settings does not, he maintains, validate the Rorschach as a tool for diagnosing or predicting schizophrenia. He raises the question, can behaviors, in fact, prove the existence of or validate theoretical constructs, which are, after all, hypothetical?

While Holt (1970) countered that prediction is not necessarily the goal of clinical assessment, Weiner (1977) carried this argument further. He advocates a more conceptual approach to Rorschach validation, where studies focus on theoretically derived relationships between personality (as measured by the Rorschach) and the behavior or behaviors under observation.

> In common with other measures of personality, then the Rorschach cannot and should not be expected to predict behavior except in circumstances where personality variables have been demonstrated to measure and are in turn known to account for the behavior to be predicted, and where the influence of unmeasured situational variables is accordingly minimal...The Rorschach successfully identifies the presence of some condition, or predicts

> some aspect of behavior only when the instrument accurately measures personality variables that in turn account in substantial part for the condition or the behavior (Weiner, 1977, p. 593-595, italics added).

Kelley and Fiske's (1951) well known-effort to predict success of clinical psychologists in graduate training is frequently cited as evidence of the Rorschach's lack of predictive validity. Their negative results, however, can be explained in part by the lack of prior hypotheses addressing the relationship between personality variables measured by the Rorschach and success as defined (not totally adequately, as the authors admitted) in this study. It is only within a meaningful context or well defined frame of reference, that construct or criterion validities can be adequately demonstrated.

Goldfried, Stricker, and Weiner (1971) helped focus exploration in this area by refining the question to be addressed. Asking globally, "is the Rorschach valid?" provides little relevant information, they propose. Rather, the most important issue at hand is: "What is the Rorschach valid for?" In summarizing a great deal of literature concerning the Rorschach's validity, Zubin et al. (1965) supported this contention. "The further we get from specific, clearly defined behaviors, the more difficult it becomes to demonstrate meaningful relationships. Large-scale correlational studies using either global judgment or specific scores to predict success in various training programs, have been rather

unsuccessful" (p. 239). They reiterated a common finding that contradictory results frequently emerge from studies exploring specific Rorschach hypotheses. Factorial studies, externally validated by outside ratings or behavior (Murstein, 1960), can be most successful in describing what the Rorschach is indeed valid for.

Although a number of efforts have been made to factor analyze the Rorschach (Adcock, 1951; Borgatta & Eschenbach, 1955; Coan, 1956; Cox, 1951; Eschenbach & Borgatta, 195; Hsu, 1947; Sandler & Ackner, 1951; Williams & Lawrence, 1953, 1954; Wittenborn, 1949a, b, 1950, 1959), few consistent findings have been reported. Problems plaguing Rorschach research in general appear again here. The absence of standardized administrations, scoring methods, and statistical analyses render results highly varied and largely incomparable (Murstein, 1960; Zubin Eron & Schumer, 1965). Procedural variations contributing to this difficulty are numerous. Some studies have used different tests, such as the Harrower-Erikson checklist of Rorschach variables in Wittenborn's 1949(a) study. Others have analyzed only a portion of the test, such as Card I responses as reported by Adcock (1951). Different scoring systems have been used, and combinations of systems have been employed at times without sufficient description to permit precise replication.

In fact, most researchers have analyzed different

combinations of Rorschach variables. Form quality for determinants has been included in some analyses, but not in others. Cox (1951), Eschenbach & Borgatta (1955), and Williams & Lawrence (1953, 1954) have all included intellectual variables or scores from other tests in their factor matrices. On the other hand, Hsu (1947) and Sandler & Ackner (1951) have examined scoring of contents only. Eschenbach and Borgatta (1955) included a "content variety score," while other investigators used only human and animal contents or made no reference to content categories at all. Determinants have been analyzed in different forms. Some research has included, for example, a weighted sum of color scores (C), while other investigations incorporated three separate color variables (FC, CF, and C). Similarly, the inclusion of shading and texture scores has varied markedly.

Finally, scores have been analyzed in different forms. Some investigators have correlated percentages and ratios, while others have used normalized scores. Both Cronbach (1949) and Mosteller and Bush (1954) have described methods of normalizing Rorschach scores, but in few of the studies examined have either of these methods been employed. Raw scores have been analyzed both with and without the inclusion of total number of responses (R). Thus, results of factorial studies to date lack definitiveness and generalizability. In addition, relatively few of the factor analyses reported

address the responses of children.

Current validation efforts appear to represent a refreshing degree of consensus between noted clinicians and empiricists. Both Weiner (1973, 1977, 1983) and Meehl (1959) agree that a most appropriate path to Rorschach validation is by construct validation. Weiner (1973) articulated the need for theoretical explanations of inferences to be made and reported that "the more solidly a validating study has been based on a conceptual framework linking the independent and dependent variables, the more likely it has been to produce positive findings" (p. 537). Cronbach and Meehl (1955) confirmed that developing and confirming theories is essentially similar to examining the construct validity of a test. Thus, evidence supporting an inference might indeed be considered evidence of construct validity as well.

On the other hand, reliance on inappropriate criteria only serve to confound the issue. Widiger and Schilling (1980) advocate, by example, the use of psychiatric classifications as criteria. This position disregards rather consistent findings that, with few specific exceptions, these are not reliable diagnostic categories (Rutter & Shaffer, 1980). Observables can be far more meaningful than merely to "ferret out the confounding relationships" (Widiger and Schilling, 1980, p. 454). Before theories, based on numerous levels of inference can be validated, a more basic relationship between Rorschach

data and other outside behaviors must be established.

An avid proponent of actuarial decision making, McDermott (1981) has recommended the use of multivariate techniques to explore the relationship between multidimensional quantitative and clinically-derived disorders in children. Similarly, Achenbach (1978), the coauthor of a widely used, empirically-based behavior rating scale, emphasizes the importance of collecting data from diverse sources focusing on relevant situations for the individual under observation. Underlying Weiner's (1973, 1977, 1983) more conceptual approach to the Rorschach, too, is recognition of the need to more clearly define and specify those behaviors to which the Rorschach is most related. As early as 1953, Halpern also recognized that projective assessment, in order to provide a more complete understanding of children's functioning, must be accompanied by historical and observational data. Achenbach (1978) clearly articulates a desirable direction for this long-standing clinical-empirical debate to take. "In the forseeable future, cumulative knowledge is more likely to emerge from integration of multiple perspectives than from dogmatic adherence to a single one" (p. 774, italics added).

Personality Assessment in the Schools

Despite its relatively widespread use among clinicians in general, the applicability of the Rorschach to school settings is extremely controversial. Koppitz (1982), Parker (1980), and

Exner (1984), oppose its use in schools for somewhat different reasons. Koppitz feels that the time and effort involved in administering and scoring the test are not justified, particularly when other personality tests are "quicker, easier and safer to use" (p. 280) with children, and because children's responses are "often quite meager and unproductive" (p. 280). She sees the Rorschach primarily as a measure of mental maturity for young children (a rather limited view); she can accept its place in a clinical setting, but not in school. Parker feels that projective tests in general are inferential in nature and based on hypothetical constructs. He does not see tests such as the Rorschach as offering useful information to the schools in terms of describing or changing specific behaviors or overall performance. Furthermore, he cites the potentially discriminating aspects of such tests to behaviorally disordered or emotionally disturbed children when "normality" is defined as conforming to norms based on responses and values of a basically white and middle-class culture.

On the other hand, Exner presents a broader and somewhat more balanced argument. He addresses and refutes misconceptions that the Rorschach is time-consuming to administer and to interpret and that interpretation is based primarily on projective theory, making it essentially subjective in nature. While he feels that the Rorschach need

not be administered to every child suspected of having social/emotional problems, he believes it can be "useful in getting at specific assets and liabilities of childhood functioning on a precise level and to help the psychologist think through objectives and how they can be achieved in the school setting" (p. 3).

Regarding projective test usage by California school psychologists, Vukovich (1983) reports that the Bender Visual Motor Gestalt Test (Bender) accounted for 59% of projective test usage. However, it was used to assess visual perception or motor ability more often than personality or self concept, and it was analyzed separately. Remaining data revealed that school psychologists used projectives approximately 11% of their time, and relied most heavily on drawings and incomplete sentences for information regarding a child's self concept and personality functioning. In fact, the Draw-A-Person (DAP) and House-Tree-Person (HTP) together accounted for 60.7% of projectives used by school psychologists (excluding the Bender), while the Rorschach and TAT/CAT (Thematic Apperception Test/Children's Apperception Test) accounted for only 6.6% of projective usage. In this study, 44% of the psychologists viewed these as inappropriate for use in a school setting.

In contrast, a 1982 survey of projective test usage by Illinois school psychologists (Johnson and Cini, Note 2) found that the Rorschach was the projective technique used most

often by 34% of the respondents. Techniques used more often than the Rorschach included Incomplete Sentences, TAT, House-Tree-Person (HTP), Bender, DAP, and Kinetic Family Drawings (KFD). A 1980 survey of general psychological test usage among school psychologists reported similar findings (Elkund, Note 1). The Rorschach was not included among the 15 most frequently used tests. Instruments such as the Bender (ranked second), H-T-P (ranked fifth), DAP and TAT (both ranked eighth), Sentence Completion Test (ranked ninth), KFD (ranked eleventh) and CAT, (ranked fifteenth) were relied upon instead. Similar tests are cited by Kaufmann (1977) as appropriate for school psychologists to suppplement information provided by the Wechsler Intelligence Scales for Children - Revised (WISC-R).

While the Bender can be a valuable tool in evaluating perceptual-motor functioning in young children, particularly with the aid of Koppitz's developmental scoring system (Bender, 1956; Koppitz, 1964, 1975), inappropriate expectations (and therefore uses) include diagnosis of organic dysfunction, evaluation of reading achievement, and detection of emotional problems. It is both curious and rather disturbing, therefore, to see the Bender appear so often in surveys of projective test usage and on lists of personality assessment measures when it is clearly least valid for such uses.

Drawings, too have a rather controversial stance in the field of school psychology. Advocates of the use of children's

drawings appear to come from a more clinical orientation, consistent with the fact that projective drawings were historically used in the assessment of adult psychiatric patients. Hammer (1960) and Machover (1953) revised their psychoanalytically- and adult-oriented projective drawing techniques for use with children, while more recently Bolander (1977), DiLeo (1973), and Koppitz (1968, 1983) have advocated the use of drawings to assess personality, self concept, emotional disturbance, neurological impairment, values, and attitudes toward self, family, school and their immediate social and cultural groups. Such application, however, "requires a great deal of insight, understanding and experience on the part of the psychologist" (Koppitz, 1983, p. 421), who must contend with the notion that "different EIs (emotional indicators) can reflect the same attitude..." and "Similarly, a single EI may have different meanings depending on the situation" (p. 423). Swenson (1965) reviewed the literature regarding the use of drawings as a means of assessing personality functioning and concluded that while "some evidence supports the use of the DAP as a rough screening device and as a gross indicator of 'level of adjustment'" (p. 650), specific hypotheses concerning the psychological meaning of various body parts have found little support in available research. Research by Dalby and Vale (1977), Fuller, Preuss, and Hawkins (1970), Lingren (1971), and Prytula and Hilard (1975) further

questions the validity of drawing techniques in evaluating self esteem, differentiating normal from emotionally disturbed youngsters and shy from aggressive children, or as measures of general anxiety in elementary school youngsters. Martin (1983) adds that, without standardized scoring procedures, no normative data, suspect reliability at best, and a preponderance of negative or contradictory validity data, use of the DAP and similar methods for the assessment of personality violates Principal 8 (Assessment Techniques) of the code of ethics of psychologists and can be considered unethical. On the other hand, Harris (1963), revising and extending earlier work by Goodenough (1926), has developed a fairly objective scoring system found to be reliable in the assessment of children's intellectual maturity. Drawings, however, continue to appear as primary means of evaluating childrens personality functioning within school settings.

Thematic tests also receive mixed reviews. With the use of pictures to stimulate fantasy, the TAT was developed as a projective technique to explore personality as reflected in an individual's response to supposedly ambiguous stimuli. Unfortunately, several TAT and CAT cards are noted for their "pull" or tendency to elicit particular types of response, calling into question the purity of their projective nature. Obrzut & Cummings (1983) report that some acceptable reliability coefficients <u>can</u> be obtained for several thematic

picture methods, and they argue that traditional measures of temporal and internal consistency may not be applicable. This is because projective techniques in general reveal motivational and emotional traits that may not be temporally stable, and these assessment tools were not designed to measure the same trait consistently throughout. Regarding validity, "there is some support for the TAT/CAT's abilities to screen certain groups on selected criteria, and for diagnosing emotional disturbance in children" (p. 417). However, while stories "can be scored using a content and quantitative analysis, ...most clinicians use a qualitative approach to interpretation" (p. 415), an issue not addressed in the literature. Thus, although reliability and validity can be demonstrated, there is reason to question the generalizability of research results to actual usage. In fact, Zubin, Eron and Schumer (1965) concluded "it is not possible to regard the TAT as a valid instrument of personality assessment, as such" (p. 462). In addition, they found little support for the use of animals in the CAT and concluded that "the paucity of validity and reliability studies in this area, the suggestion of poor construct validity, and the almost complete dependence on the experimenter's subjective evaluation of results, indicate that the CAT does not as yet qualify as an instrument of measurement" (p. 505).

After reviewing many studies involving adults and adult-oriented methods, Goldberg (1965) concluded that the sentence

completion method can be a valid means of assessing personality function. Watson (1978) reported that "the sentence completion method has, on the whole, been shown to be a flexible and useful clinical and research tool" (p. 275). Hart, on the other hand, has developed a sentence completion test designed specifically for school psychologists (1972), with reports of acceptable reliability and validity (Hart, Kehle, & Davies, 1983). Based on children's perceptions of self, family, school, and social interactions, the instrument is described as "sensitive to a child's development or maturation" (p. 430). However, practitioners are known to develop and use their own custom designed tests, and they may or may not use objective and validated scoring methods in their daily work. Therefore, even these more positive reports are of suspect generalizability.

Thus, among those tests most frequently in schools used for the assessment of personality functioning in children, none emerge with strong enough reliability and validity to support their application and actual use. Implicit in the use of many of these instruments is the assumption that problems lie primarily within the child and must be assessed indirectly. Issues concerning examiner and/or test bias with such measures, the viability of the projective method to assess personality, and the questionable generalizability of such limited samples of behavior remain unresolved. Valid situational data are

necessary to enable psychologists, as scientists, to more thoroughly understand their means of assessing behavior, defined, in part, as the product of personality and environment.

Behavior Assessment

In recent years, behavior assessment has been presented as an important alternative to these more traditional methods of psychological evaluation (Kanfer & Saslow, 1965; Keller, 1980). The behavioral approach, in particular, attempts to examine the relationship between specific environmental conditions and certain behaviors more directly than most clinical methods (Ciminero, 1977). Challenging the assumption that personality reflects primarily internal phenomena, the field of behavioral assessment has adopted a more contextual approach. Personality comes to be understood as it is manifest phenomenologically, as a group of behaviors expressed under specific or more general circumstances.

Behavior rating scales are instruments particularly well suited for gathering information delimiting observable and verifiable behaviors expressed by children in schools and related environments. Specific scales can provide for more standardized observations than more idiographic methods of recording a specific child's behaviors of concern. This becomes particularly important when school children have been referred for psychological evaluation. Certain adults, by

definition, have perceived and experienced a child's behavior as deviant from his or her cohorts in class. Since the status of children renders them constantly under the control of strong external social forces, the child's social environment must be carefully considered. To ignore the specific context of any behavior described as problematic might lead to a serious misunderstanding of the presenting difficulty and to potentially ineffective treatment approaches. Parameters of behavior within specific situational settings, such as the classroom, must be defined and described in order to develop appropriate intervention strategies for children manifesting problems in school, a key function of school psychologists. Schools are a critical social environment in which considerable growth, development, and change can occur. While

> this strategy does not reject the potential importance of hypothetical constructs...or internal psychological processes..., it does not rest necessarily upon the verity of such concepts. Moreover, by eliminating the need for subjective interpretation of the significance of abnormal child behaviors the phenomenological measures...provide respondent observers with clear behavioral descriptions that can be used to describe children's different styles of coping with self and others in naturalistic, rather than contrived, social settings (McDermott, 1981, pp. 2-3).

In addition, such behaviorally-based rating scales can be completed by teachers, those persons most closely in touch with the school related behavior repertoires of children; i.e., their modes of interacting in a variety of learning, social,

and competitive situations.

An ideal rating scale would require little or no inference by the observer, would have been standardized on groups including both normal and maladjusted children comparable to those with whom the scale would be used, would include examples of healthy as well as deviant behaviors, and would be comprehensive, including a number of items representing each behavioral dimension addressed. In addition, it would be situationally-specific, including contextual reference points identifying "how," "when," and "with whom" a particular behavior occurs and sufficiently brief to minimize fatigue in the observer when rating behaviors of a number of children (McDermott, 1981). Stott's Bristol Social Adjustment Guides (BSAG) (1970) meet all of these criteria, and they are noted for their excellent normative base, derived from a random aggregation of elementary school children in both urban and rural areas.

The BSAG have demonstrated internal consistency (Stott, 1972) and validity in the identification, description, and prediction of maladjustment in children (Davis, Butler & Goldstein, 1972; McDermott, 1980b; Stott, 1978, 1979; Stott, Marston & Neill, 1973, 1975; Stott & Wilson, 1977). However, a distinct limitation of this method is the situational specificity of the information obtained. How does one teacher's record of a child's classroom behavior generalize to

other situations or to other teacher's observations? Achenbach (1978) argues that different observers and their unique relationships to the subjects (children in school, in this case) being observed will also affect the data obtained. He suggests that "because there is typically no single criterion situation against which to validate observations, it is important to obtain multiple measures from observers who differ in their relationships with the subjects" (p. 764). While teachers provide relevant and potentially very meaningful information through a behavior rating scale such as the BSAG, the utility of this information beyond the scope of the specific teacher and classroom from which it was obtained is clearly limited.

Summary and Implications

Thus, while the Rorschach is not a personality assessment tool frequently used by school psychologists, the instruments they appear to rely upon instead are clearly inadequate in providing reliable and valid information about the broader scope of a child's functioning. Presently, clinicians and Rorschach die-hards are the primary advocates of the applicability and utility of the Rorschach despite a marked paucity of supporting data; they seem to operate on the basis of blind faith alone. On the other hand, methods of behavior observation at present may be more frequently applied in school settings. These are perceived as both more reliable and more

valid, although the effect of variability in raters and settings is often not considered. Obviously, there are inherent limitations in both approaches to understanding children.

Literature from both clinically-oriented and behavioral-actuarial camps points professionals in a similar direction. Both call for the integration of various points of view to broaden our understanding. Neither continues to advocate a single-minded, unidirectional school of thought. Acting from the premise that an individual's personality is expressed in his or her response to a variety of situations, this study represents an effort to correlate those aspects of personality observed in a special education classroom setting with those revealed in a semi-structured interview; i.e., individual administration of the Rorschach inkblot test. The same students were observed by different individuals in different environments. Multivariate analyses were utilized throughout to optimally capture the complex nature of human behavior, both as it was observed in a special education setting and recorded by the classroom teacher on the BSAG and as it was reflected in a student's response to the Rorschach. Underlying this research lay the assumption that a significant proportion of common variance should be identifiable between factors actuarially derived for the Bristol Social Adjustment Guides and a limited number developed from numerous Rorschach

variables.

By attempting to reciprocally validate two frequently used instruments in the psychological assessment of special education students, steps were taken to bridge the gap between clinical and phenomenological-empirical schools of thought. It was hoped that clusters of Rorschach scores could be actuarially linked with specific behavior profiles and that the association of classroom behaviors with particular Rorschach data could begin to validate many of the to date unsupported interpretations rendered from this controversial technique. In turn, the correlation of situation-specific behaviors with potentially more pervasive personality descriptors could add to the reliablity and broaden the applicability of behavior observations. In sum, in this study, the author sought to take preliminary steps toward fulfilling school psychologists' need for empirically tested methods of personality assessment, deemed necessary for competent diagnostic evaluation and meaningful remediation for handicapped children in our schools.

CHAPTER III

Methods

Subjects and Setting

The subjects for this study were 162 students with learning and/or adjustment difficulties attending a private suburban facility providing special education. These students had been grouped according to developmental age, chronological age, academic ability and degree of disturbance. The Main Unit provided structured therapeutic classrooms, emphasizing academic remediation and appropriate classroom behavior and work habits. Within it, the Alternative Unit was designed for those children needing even more support, both clinically and academically. Children ranging in age from 7 to 15 years and performing at the second through ninth grade levels were part of the Lower School, while those from 14 to 21 years and performing at the eighth through twelfth grade levels were in the Upper School. S.P.I.R.I.T. (School Program Involving Rehabilitation and Individualized Treatment), was designed as an alternative to a structured classroom setting for those who had been school resistant, and who required a more flexible, activity-oriented learning environment.

Upon enrolling their child in this school, all parents had

signed a "release of information" form. This permitted students to participate in a wide range of approved programs, including psychological assessment, as deemed necessary by the staff. After this project was approved by the chief administrator, parents of all students in the Main Unit, Alternative Units, and S.P.I.R.I.T. Unit received a letter describing the study and requesting their permission for their child's participation (see Appendix A). They were invited to contact the investigator directly to answer any questions, and eight parents did so.

Meanwhile, the Educational Director provided an opportunity for the investigator to meet the teaching staff to be involved, by inviting her to attend several regularly scheduled faculty meetings. Here the project was described in detail. Teacher participation was discussed, instruments were distributed, and questions were answered. At this point student volunteers were solicited. The investigator met with each class of potential participants. Sample inkblots were shown to the groups to give them an idea of what they would be asked to do. The project was described as this examiner's final project required before finishing her current university program. Opportunity to ask questions was provided. Only those volunteers whose parents had granted permission were allowed to participate.

This sample included 135 boys and 27 girls, ranging from 7

to 21 years of age. Socioeconomic status was varied as was ethnicity. Fifty students participated from the Upper School of the Main Unit, and 69 from the Main Lower School. Eighteen students participated from each of the Alternative Units (Upper and Lower), and 5 were from S.P.I.R.I.T.

Instrumentation

The instruments selected for this study were chosen as representative of two complementary, but not currently well-integrated methods of assessing children. While one instrument, The Bristol Social Adjustment Guides (BSAG) (Stott, 1970), possesses excellent psychometric properties, results are situation-specific, without indication of more pervasive personality traits or general response patterns. On the other hand, the Rorschach Inkblot Test (Rorschach, 1949) though widely used clinically and in planning for therapeutic intervention, has often been avoided in school settings. Criticized for its psychometric inadequacies, the absence of substantiated behavioral concomitants to accompany personality descriptions has further limited the Rorschach's utility. Samples of the BSAG, Rorschach, and accompanying scoring sheets can be found in Appendices B through D.

Bristol Social Adjustment Guides. The BSAG constitute a phenomenologically/behaviorally based rating scale to be completed individually for each child by his/her own classroom teacher. The items were developed from teacher's descriptions

of both maladjusted and adjusted behaviors in a school learning environment. Thus, they are written in language typically used by teachers. As descriptions of behaviors frequently exhibited in a classroom, items require little, if any, inference or interpretation by the child's current classroom teacher. All phrases that apply to the child being observed are underlined, "so as to give the maximum freedom of recording and to avoid forcing teachers to make decisions which they feel are artificial" (Stott, 1972, p. 4).

The BSAG yield scores on five core syndromes of maladjustment, based on a total of 110 items. (The 43 well-adjusted behavior descriptions remain unscored). Each item underlined as true for that child under observation constitutes a score. As described by Stott (1972) these are: (a) Unforthcomingness (U), characterized by lack of initiative, retreat from the unfamiliar and a general absence of self-assertion in the face of new situations, conflicts or difficult and strange tasks; (b) Withdrawal, (W) represented by unresponsiveness, indifference or aversion to interactions with others; (c) Depression (D), in the absence of apprehensiveness or withdrawal described above, includes behaviors indicative of a pervasive lack of response to environmental stimulation as well as a marked failure to seek out such stimulation; (d) Inconsequence (Q), including impulsive acts, behaviors emitted without planning, forethought, or attention to consequences;

and (e) Hostility (H), by definition distinct from pure aggressiveness, consisting of a combination of attack/avoidance behaviors serving to sever relationships with others, frequently adults. Internal consistency for these core syndromes ranges from .57 for Withdrawal to .83 for Inconsequence. After a one-year interval, on a second BSAG completed for two randomly drawn subsamples of the original sample, "there was a general tendency for the scores to be lower" (Stott, 1972, p. 11).

In addition, three associated groupings of behaviors have been described, distinguished by their tendency to accompany and support the five core syndromes, yet lacking sufficient homogeneity to be considered syndromes themselves. These are: (a) Nonsyndromic Underreaction (UR), including passive-like behaviors frequently occurring with Unforthcomingness, Withdrawal and Depression, (b) Nonsyndromic Overreaction (OV), characterized by socially deviant behavior corroborating and coinciding with Inconsequence and Hostility, and (c) Peer Maladaptiveness (PM), similar to, yet distinct from Q and H, including items reflecting hostile or antisocial attitudes toward other children and poor peer relations in general. Measures of internal consistency for the associated groupings range from .57 for UR to .76 for PM. There is also a grouping of items "which seemed to be involuntary indications of neural malfunction rather than motivated behavior in the sense that

the agent aims to affect some change in his relationships with the environment" (Stott, 1972, p. 8). These are termed Neurological symptoms (N) and have a reported internal consistency coefficient of .45.

A combination of raw scores from Unforthcomingness, Withdrawal, Depression, and Nonsyndromic Underreaction forms the Underreaction scale, and it yields an Unract scale score with a reported reliability coefficient of .83. Similarly, scores from Inconsequence, Hostility, Peer Maladaptiveness, and Nonsyndromic Overreaction combine to produce the Overreaction scale. The Ovract scale score has a reported reliability of .91. Ovract and Unract scores are comparable to the "Internalizing" and "Externalizing" dimensions reported by Edelbrock and Achenbach (1980) and to the withdrawn vs. acting-out dichotomy reported by others (Rutter, 1967; Quay, 1979). Several validation studies have supported the utility of BSAG syndromes in the identification, description, and prediction of maladjustment in children (Davis, Butler, & Goldstein, 1972; Stott, 1978, 1979; Stott, Marston, & Neill, 1973, 1975; Stott & Wilson, 1977). Using principal-component factor analysis, McDermott (1980b) confirmed the construct validity of both Ovract and Unract scales and provided evidence for syndromic specificity of Hostility, Inconsequence, Unforthcomingness, and Peer-Maladaptiveness. While neither Depression nor Withdrawal groupings emerged as syndromes with sufficient specificity,

drawing on similar data gathered from a largely clinical population (Hale, 1968) and data from a recent reanalysis of the BSAG standardization data (McDermott, 1980b), McDermott concludes that,

> depending upon the subpopulation of children being considered, the Withdrawal and Depression syndromes will either covary positively (conjoint variation as in a mostly normal sample) or negatively (reciprocal variation as in a clinical sample) in their contribution to a typology of social maladjustment (p. 227).

The BSAG is scored by placing templates over each page of the observation form. Those items underlined as true for each subject are indicated on the BSAG Diagnostic Form. The number of items scored within each syndrome is summarized and then summed vertically to produce total Unract and Ovract scores. Thus, these scores are actually frequency counts of the number of occurrences of certain behaviors or behavior types.

Rorschach Inkblot Test. The Rorschach, on the other hand, consists of ten inkblots, each printed on a separate white card. Each card is referred to as a plate. Though all blots are bilaterally symmetrical, five of the blots contain only shades of black and gray, two contain additional portions of bright red, and the remaining three comprise combinations of several pastel colors. The inkblots are presented one at a time to an individual, who is asked what each looks like or what it might be. Responses made during this free association portion of the test are recorded verbatim, as are any questions

or spontaneous comments made to the examiner. After all 10 cards have been presented, the examiner inquires further to clarify particulars of each response in order to enhance scoring. This final portion of Rorschach administration is referred to as the inquiry.

While at least seven separate systems cur·ently exist for scoring Rorschach responses, Exner's Comprehensive System (1974) has integrated some of the more commonly used features of other methods. Basing his work on a combination of empirical analyses and recommendations from practitioners frequently using the Rorschach, Exner has demonstrated adequate interscorer reliability and introduced several useful and new scoring categories as well (Exner, 1978, Exner and Weiner, 1982). In order to enhance replicability, scoring for this study was based primarily upon the Exner System. Thus, each response was scored, or coded along the following dimensions:

1. Initial Response Time--time elapsed, in seconds, between presentation of inkblot and expression of first response to each plate.

2. Card Position--for each response, note was made as to whether plate (a) was in the upright position, (b) was upside down, (c) had either the right or left side at the top, or (d) had been rotated one or more times before a response was made to the plate in the upright position.

3. Total Number of Responses (R)--summed across all 10

plates.

4. Rejections--number of plates to which no response was offered. Coded as (a) general, (b) response offered in inquiry, (c) popular response offered in inquiry or (d) near popular response offered in inquiry.

5. Additional Responses--new responses offered for the first time during the inquiry portion of administration. These are not included in formal scoring: (a) general, (b) popular response, (c) near popular response, (d) responses were not explored due to lack of time, (e) more than one general response offered in inquiry.

6. Response Changes--expressed during the inquiry portion of the administration: (a) response denied or rejected, (b) popular rejected, (c) change from one popular to another, (d) change from popular to near popular, (e) change from popular to general response, (f) change from one general response to another, (g) change from general response to popular, (h) change from general response to near popular, (i) change from one near popular response to another, (j) change from near popular response to a popular, (k) change from near popular response to general response.

7. Location--which part or parts of the inkblot containing the perceived response: (a) whole (W), (b) whole with space (WS), (c) common detail (D), (d) common detail with space (DS), (e) unusual detail (Dd), (f) unusual detail with

space (DdS), (g) confabulated whole (DW). Common details as described in the Comprehensive System (Exner, 1974, 1978; Exner & Weiner, 1982) have been based on frequencies derived from normative samples. Confabulated wholes involve perceptual overgeneralizations where the subject names a response to the entire blot without regard to the structure of the blot, basing it instead on a singular common or unusual detail.

8. Developmental Quality--degree of integration or organization involved in each percept, described in four levels: (+) synthesized--one or more perceptually articulated portions of the blot, combined into a unitary response; (o) consistent or ordinary--emphasis on the more obvious structural outlines of the blot; (v) vague--structural features and specific outlines of the blot are irrelevant to the response which is often diffuse or impressionistic in nature; (-) arbitrary--use of the blot or blot area(s) is inconsistent with the structure of the blot itself.

9. Determinants--qualitative aspects of the blot influential in the perception of each response. Determinants are often derived during the inquiry portion of administration in response to the query, "What about the blot made it look that way to you?" These may be scored singly or in combinations as Blends depending on the perceptual complexity of the response. (a) Form (F) indicates that the shape or outline of the blot was influential in forming the percept;

(b) Movement: human or human-like (M), animal or animal-like (FM), or inanimate, i.e. non-human and non-animal (m), refers to percepts in which "kinesthetic innervation" (Piotrowski, 1974) or muscular tension are reported in the form of ongoing motion, or as postures or poses. Movement responses can be further differentiated according to whether or not forces of gravity are overcome. Piotrowski's (1974) assertive and compliant subdivisions are similar to flexor and extensor distinctions noted by Rorschach (1949) and to the active-passive dimensions described by Exner (1974). Pressley (1980, Note 5) has described blocked movement as the perception of movement that is about to happen, has just happened, or is present primarily in the form of movement potential or effort (eg. going to jump, just been run over, trying to see) This addresses and incorporates the notion of static movement noted by Beck (1961) and indecisive or spurious movement described by Piotrowski (1974). For this study, active movement (superscript-a) was coded when kinesthetic activity resisted the pull of gravity or required active assertion of energy, passive movement (superscript-p) was scored when gravity was given in to or passive energy was required, and blocked movement (superscript-b) was noted when movement was static, spurious, indecisive or in the form of movement potential as noted above. A total of 18 scoring categories were allocated for movement responses incorporating these six dimensions

singularly and in combination. (c) Color (C) is scored when chromatic aspects of the blot have influenced the percept. Color responses can be qualitatively defined as positive, or life sustaining and life enhancing, or negative, i.e. life destroying. Piotrowski (1981, Note 4) has indicated that it is these more qualitative aspects of scoring that may ultimately distinguish between healthy and disturbed populations, and thus they were incorporated into this study. Color responses are scored in a manner reflecting the degree of form (F) involved in the percept. Responses without form are scored (C), for example, paint. Responses with form as secondary are scored (CF), as in an abstract painting. Where form is a dominant or essential component of the percept, e.g. a yellow daffodil, the score would be (FC). In some instances, color is used symbolically to reflect abstract or global notions (the red makes it look angry, the blue reminds me of peace). The scoring category, Csym, as discussed by Pressley and Martin (1980) was used to denote these occurrences. When the colors were merely described (that's red, this is green, etc.), color naming was scored (Cn). Finally, when color was described on the non-chromatic cards, color projection (CP) was noted. Exner incorporated this into his special scorings in his 1982 volume which was not available at the time these protocols were scored. (d) Achromatic color (C') refers to the specific use of black, white or gray. As with color, scoring reflects the

inclusion of form in each percept. Black, white, gray and specific combinations were noted separately. (e) Shading reflects the influence of varying tones of the blot in the percept without specific mention of black, white or gray. When texture is implied by the shadings (furry, fluffy, rough), T is scored. When depth or dimensional perspective are noted as a result of the tones of the blot, V is scored, and when shading appears to influence the response in a general or diffuse way, Y is scored. Scoring depends entirely on the verbal expression of the subject. If specific mention of the shades or tones is not made or clearly alluded to, shading (or any other determinant) cannot be scored. It was noted in this population, that subjects frequently made responses involving texture, but without specific reference to the shading of the blot. Rather than lose the potential value of a "texture response," a code was developed for the use of texture without shading. These responses were scored Tx. As with both achromatic and chromatic color, the degree of form involvement in each percept was noted by inclusion and placement of F. (f) Reflections (rF, Fr) are scored when subjects, relying on the symmetry of the blot, use this concept in their response, either directly via use of the word "reflection," or indirectly, implied by such phrases as "mirror image," or "seeing itself in the lake." As with the other determinants except movement, the placement of F indicates the degree of

form involved in the percept. (g) Form dimensionality (FD) is scored when a response includes "perspective or dimensionality based exclusively on form, interpreted by size or in relation to other blot areas" (Exner, 1974, p.99). It is distinguished from the V response by the absence of articulated shading as a determining factor in the response.

For each response, scoring space was allocated for a maximum of five determinants in a blend.

10. Pairs (2)-- are noted whenever the percept is described as containing two identical objects on either side of the blot's center. Pairs are based in part on the symmetry of the plates.

11. Form Quality (FQ)—reflects the degree of perceptual accuracy of a response, or its goodness of fit relative to the form and structure of the blot itself. Exner (1974) has based his tables in part on frequency data generated from approximately 1200 protocols containing approximately 26,000 responses. "Good Form" responses were developed from 809 records of nonpsychiatric persons and nonpsychotic outpatients; schizophrenic and nonschizophrenic inpatients produced the remaining records used as sources of "poor form" responses. Modifying Mayman's work which described six categories for differentiating form quality (1966, 1970), Exner presents a four category scoring system along with evidence of scoring reliability (1974): (+) Superior responses require well

articulated uses of form that enrich the quality of the response with unique and/or specific descriptions without sacrificing goodness of fit; (o) Ordinary responses are usually commonplace and easy to see, with obvious congruence between the content and the blot area(s) utilized; (w) Weak responses are not easily perceived and evidence some shift away from congruence between blot area and content. While the percept does not totally lack goodness of fit, it often involves unconvincing and ill-conceived uses of form. Responses scored as w were not found in the form tables utilized as either +, o, or - responses; and (-) Minus responses reflect complete or near total disregard for the structure of the blot itself. Contents offered suggest distorted, unrealistic and arbitrary uses of form. Responses scored as DQ- were usually scored FQ- as well. While Exner's 1974 volume contains a listing of good (+ or o) and poor (w or -) responses, it is quite limited. Therefore Hertz's (1970) tables were consulted for the determination of form quality in this study, based on the criteria outlined above.

12. Populars (P)--are defined as those responses occurring with the frequency of one in every three protocols. While different scoring systems have identified somewhat different populars, for this study, those presented by Exner were used (1974, pp. 132-133). To identify those responses where the criteria for popular were not specifically met, but

were close in terms of content, location or determinant, the notation ((P)) indicated a "near-popular" response.

13. Contents--are noted by specific category for each response. For this study, all contents were recorded verbatim, and then categorized by two independent examiners. The 61 content categories with scoring examples and kappa coefficients (Cohen, 1960) can be found in Appendix E.

14. Organizational Activity (Z)--reflects the presence of a meaningful relationship between component parts of a percept. All Whole responses (W) are allocated a Z score, as are those responses which meaningfully integrate two or more adjacent or nonadjacent detail areas, or which meaningfully integrate white space with other blot details. Form must be involved for organizational activity to be scored. Specific Z scores are assigned based on weighted values identified in table form, originally published by Beck, Beck, Levitt, and Molish (1961) and reproduced by Exner (1974). For each Rorschach record (compilation of all of an individuals responses), the frequency of Z scores is computed (Zf), the actual Z scores are summed (Zsum), and a difference score (ZD) computed between the obtained Zsum and the estimated value based on Zf.

15. Special Scores--are notations reflecting idiosyncratic qualities of a response not identified elsewhere. Unique verbalizations are considered a meaningful element indicative of an individuals particular mode of cognitive

processing. Prior to inclusion in Exner's Comprehensive System of scoring, both inter-rater reliability and empirical indicators of validity were sought (Exner, Weiner and Schuyler, 1976; Weiner, 1977). While no formal criteria were included for special scores in Volume 1 of the Comprehensive System (Exner, 1974), Volume 2 (Exner, 1978) includes six types, and Volume 3 (Exner and Weiner, 1982) an additional four. For this study, seven of Exner's special scores were included, as these were all that were published at the time scoring was completed. (a) The personal response (PER) indicates some reference was made to the subject's own life or personal experience ("it looks like a bat I saw in the attic," "that looks just like my favorite album cover"). (b) Perseveration (PSV) involves repetition of the same response or particular content either within a single plate or across plates. Within card PSV reflects the use of exactly the same location, same determinant(s), same content category, same DQ and FQ scores, and same Z and P scores as the preceding response. PSV occurring across cards involves the same content as has been identified earlier, though other scorings may in fact be different ("Oh, here's that bat again, only this time he's flying"). In addition, when a subject gives the same response to several cards with no intervening responses ("These all look like bats to me; this one, too"), PSV is also scored. (c) Deviant verbalizations (DV) are characterized by highly unusual

modes of expression involving distortions of language, neologisms, peculiar sentence structure, or inappropriate and often personalized commentary. Such expression appears independent of cultural variations, limited vocabulary or intelligence. Phrases such as, "Something in a biography lab;" "It's a bat but I was wishing to see a dog;" "A monster that no one has ever seen;" "An x-ray of somebody's self" (Exner, 1978, p. 22) or "A butterfly, here are its antlers" would all be scored DV. (d) Incongruous combinations (INCOM) consist of a single object or percept created by condensing two seemingly incongruous details. Inappropriate color-form combinations such as "pink bears" while receiving a negative color score (CFneg), would also be scored DV, as would responses such as "People with bird heads." (e) Fabulized combinations (FABCOM) are scored when two or more separate blot details are implausibly combined into a single percept such as "Worms jumping off diving boards." (f) Contaminations (CONTAM) reflect the most pathological form of cognitive slippage or perceptual distortion scored. Reality is clearly violated (rather than implied as in the previously described special scores) as two or more distinct impressions, usually from different blot areas, are "fused" into a single response. There is often a bizarre quality to the response, and form quality is always scored as minus (-). "For instance, a subject responding to the upper red area of Card II said, 'This

part looks like blood, and it also looks like an island, so it must be bloody island,'" (Exner, 1978, p.23). (g) Autistic logic (ALOG) is scored when a subject spontaneously uses unconventional logic or strained reasoning to explain or justify a response. Often such reasoning reflects overemphasis on size, positioning or number of objects incorporated into a percept. "This green must be lettuce because it's next to the rabbit," or "It's the North Pole because its at the top," would be examples of responses scored as ALOG.

Another three categories were added to capture specific qualities of response made by this group. (h) TV reflects reference to television programs or characters, movies, and movie characters, also record albums, rock stars, books and other media attended to by this group. (i) Transparencies (TRANS) are scored when perceptual boundaries appear to disappear as when a body is described from both the outside ("It looks like a face") and the inside (" and here are the skull bones, blood vessels, lips, ears and eyes"). (j) When a subject is critical of a card, "This looks weird," "It looks like a bat, but the wings aren't right," CRIT is scored. When a response approached the criteria for a special scoring, but did not meet them exactly, a near-special score ((SPEC)) was allocated. Thus, there were a total of 10 special scores and 10 near-special scores used in this project.

Procedure

Data collection. Data for this study were collected from February through May of 1982. When the project was about to begin, all teachers were given a tentative schedule. Based upon prior knowledge of class schedules, specific needs of each teacher were incorporated as much as possible. The number of participants from each class was estimated based on class size and number of returned permission forms; BSAG forms were distributed accordingly.

Approximately 30 minutes were allocated for each Rorschach administration. Student volunteers were taken from class individually according to the schedule. No more than four students were taken from a single class during a given week to minimize classroom disruption. Most students were administered a Rorschach and had a completed BSAG within the same four week period. Each participant was given a standard administration of the Rorschach (Exner, 1974) by this investigator during the course of a normal school day. Seating was side-by-side. Inquiry was conducted after the Free Association to all ten plates had been completed for all subjects. Scoring was based upon Exner's Comprehensive System (1974, 1978), with the modifications described above.

Students from 26 different classrooms participated in this study. For all groups except one, the BSAG were completed by the primary classroom teacher, who had known his or her group

of students for at least six months. For the exception, an Upper School class with nine participants, the primary teacher left school suddenly due to illness, and observations were completed by the assistant teacher. These observations were considered valid and were included in the final analyses, as there was the same degree of familiarity with the students and no reason to doubt her competence as an observer.

Prior to data analysis, background information was collected for each participant by consulting student files. Date of birth and admission date were recorded, and age and length of stay to date were computed. Referral source was noted and recorded to indicate state and private or public agency. Reason for referral was copied verbatim from the files and later coded by two independent examiners. To establish agreement beyond chance, kappa coefficients were computed (Cohen, 1960). The resulting 14 Reasons for Referral can be found, along with relevant kappa coefficients, in Appendix F. One reason for referral was recorded for 155 students, two reasons for 106 students, three reasons for 53 students, four reasons for 25 students, and five reasons were recorded for only five cases.

Special Education Classification was found in each student's IEP and was described as (a) SED, socially and emotionally disturbed, (b) BD, brain damaged, or (c) Both. Psychiatric diagnoses were recorded verbatim, along with DSM-II

or DSM-III classifications when present. These were then categorized by two independent examiners to coincide as closely as possible with the current DSM-III system. The categories were checked for reliability using the kappa coefficient. Many of the "diagnoses" found did not fit, however, into this diagnostic system; some of what was recorded as diagnosis appeared to be more descriptive in nature. In order to be sure that this sort of statement was included as potentially meaningful information, a separate group of categories was developed, checked, and referred to as "diagnostic concomitants." While 114 students had at least one diagnosis, 46 students were assigned two. Forty-four students had one diagnostic concomitant, and nine had two. The final 21 diagnoses and 16 diagnostic concomitants can be found in Appendices G and H.

Current residence (campus, both parents, mother only, father only, relative, guardian or other), parents' marital status, birth order, and sibship were also noted. In addition, background information was often found in the files that was believed to be relevant to that student's behaviors in school. As before, these were recorded verbatim, categorized, and checked for agreement. Fifty-five participants had one background variable, 18 had two, and four students had three. The 16 background categories can be found in Appendix I. Medication was currently used by 27 students, and 6 had a

history of fire setting. Achievement data were compiled from the most recent administration of the CTBS (March, 1982, Form U). Normalized curve equivalent scores (NCE) were recorded, as these are most comparable across ages and grades. IQ scores were recorded as they appeared in the files with specifications as to test used and date administered. To achieve relative comparability across tests, Sattler's (1982, p. 607) IQ classifications were used for subsequent analyses.

Data Analyses. For each subject, an identification number was assigned, and this was keypunched along with 38 background and morbidity variables, 110 BSAG items, plus UR score, OR score, and six additional descriptors from the Bristol. Every participant in this project had three data cards containing descriptive and BSAG information. For the Rorschach, 17 pieces of information were coded for each response, and each response was allocated to a separate data card: (a) plate number (I through X), (b) response number, (c) type of rejection (if present, there were four types), (d) type of addition (five types if present), (e) 12 types of response changes (if present), (f) initial response time in seconds (recorded for the first response to each of 10 plates, present in all cases except where the plate was rejected), (g) card position (four possibilities), (h) location (seven specific locations), (i) developmental quality (four levels), (j) determinants (each response could be assigned from one to five of 59

determinants), (k) form quality (four levels), (l) pairs (if present), (m) populars (if present with separate codes depending on plate), (n) contents (each response could be assigned from one to four of 61 contents), (o) Z-score (numeral from 1.0 to 6.5 in intervals of 0.5 coded only when present), (p) special score (from 0 to four of 20 types could be assigned to each response), and (q) Z-sum estimate, taken from Table D in Exner's Comprehensive System, Volume 1 (1974). Thus each student had a variable number of data cards based on their number of responses to the Rorschach.

For this study, data were analyzed using both the SAS (SAS Institute, Inc., 1983) and SPSS^{X} (SPSS, 1983) computer programs run on an IBM system 370 at the Loyola University Computer Center in Chicago, Illinois. SAS was used initially to summarize variable amounts of information per subject so that group statistics could be computed and summary data examined. Once this was accomplished, SPSS was used to compute frequencies, distribution statistics, factor analyses, canonical correlations, product-moment correlations, discriminant analyses, and t tests.

Frequency statistics were computed first on all background and descriptive variables. These were used to describe the sample specifically and identify parameters and a frame of reference for understanding findings generated from further analyses.

Due to the uniqueness of this sample and McDermott's report (1980b) that different samples have different factor structures, summary scores for neither the five core syndromes, three associated groupings, nor the total Unract and Ovract factors were used for these computations. Instead, individual scores for each of the 110 BSAG items were entered for analysis. Once distribution statistics were computed, seven items with a frequency of less than 5% of the sample (less than 8) were excluded from further analyses. The remaining data were submitted to a series of principal-component factor analyses with varimax rotations changing the number of factors rotated. The most stable factor structure was identified and compared with the core syndromes and associated groupings developed from the standardization sample. Factor scores were computed, along with means and standard deviations for the sample. Factors were tested for internal consistency using coefficient alpha. Those factors meeting the criteria of psychological and statistical integrity, containing a minimum of four items, were used for the remainder of the analyses.

Rorschach data were examined next. Frequencies for each scoring category were computed, first summarizing responses for each subject and then across all subjects. There were no general types of information recorded that occurred with marked infrequency to warrant exclusion at this point. However, specific variations within the following categories were pooled

and treated as occurrences of equal weight: rejections, additions, response changes, populars, and special scores. Content and determinant categories were sufficiently large to necessitate use of actuarial data-reduction methods. The frequencies for the 61 content categories and 59 types of determinants were each subjected to a series of principal-component factor analyses with varimax rotation. Items with frequencies of less than eight (5% of the sample) were excluded from further analyses so as not to inordinately skew findings. By limiting the number of factors rotated and altering the minimal eigenvalue used for rotation, the most stable factor structure was sought for both contents and determinants. Again, factors were tested for internal consistency using coefficient alpha. Four factors (including 20 determinants), and two factors (including only 10 contents) had alpha coefficients greater than or equal to .55, and this was considered inadequate. Thus, the 40 determinants and 56 contents with frequencies greater than or equal to eight were entered together into a series of principal-component factor analyses, using the same variations of rotated factors and eigenvalues as before. The seven factors, incorporating 21 contents and 21 determinants, generated from these analyses were both psychologically meaningful and statistically sound and were used for further analyses.

The 30 remaining Rorschach variables were submitted to a

similar series of principal-component factor analyses with varimax rotations. Three factors with both psychological integrity and statistical consistency were entered into a final series of factor analyses, along with the content-determinant factors, to generate three stable and viable all-encompassing Rorschach factors to be correlated with BSAG factors.

The reliability of these Rorschach factors was tested by having an independent expert in Rorschach scoring learn the seven content-determinant factors and three Rorschach factors. She rescored 53 randomly-selected records. Factor scores generated by the investigator and those computed by this independent examiner, were compared using product-moment correlations and t tests for dependent means. Significant correlations and non-significant t tests led to the acceptance of these factors and the remainder of the analyses.

Canonical correlation was performed next on the five BSAG factors and three all-inclusive Rorschach factors. When no significant findings resulted, canonical correlation was repeated using several combinations of Rorschach factors: content-determinant factors alone, Rorschach factors encompassing the rest of the raw data by themselves, and these two types of factors together. The absence of significant findings again led to the computation of bivariate correlations among 65 variables, including 17 morbidity characteristics, the five BSAG factors, and Rorschach data entered individually, as

well as in factor form. Finally two sets of discriminant-function analyses were performed, comparing the ability of Rorschach factors and BSAG factors to correctly group students by special education classification and by psychiatric diagnosis. For these analyses, psychiatric diagnoses were recoded (SPSS, 1983) to represent only DSM-III code 312, conduct disorder and disorders of impulse control, code 313, anxiety and other disorders of childhood and adolescence, and code 314, attention deficit disorder.

Research Hypotheses

The specific research hypotheses tested in his exploratory study were:

(1) Dimensions with factorial integrity can be extracted and identified for Rorschach data which make both psychological and statistical sense.

(2) The BSAG factor structure generated from a sample comprising identified special education students will be sufficiently different from that developed from the standardization sample of non-identified students to warrant use of sample-specific factor scores.

(3) Patterns of meaningful relationship, represented by significant canonical variates, can be demonstrated between factors derived from a behaviorally-based classroom observation scale, the BSAG, and factors based on configurations of scores from a projective method of assessment, the Rorschach Inkblot

Test.

(4) Psychologically meaningful profiles representing the empirical relationship between specific groups of Rorschach variables, statistically related to each other, and behaviors expressed as individual or combinations of factors derived from the BSAG, can be described.

(5) Certain Rorschach scores and BSAG items will occur with sufficient psychological inconsequence and infrequency to warrant exclusion from further analyses.

(6) To test several accepted assumptions concerning the use and interpretation of these instruments, the following trends are posited: (a) Qualitative Rorschach scores, i.e. developmental quality (DQ), organizational activity (Zf and ZD), positive vs. negative color (C), black, white or gray achromatic color (C'), active, passive or blocked movement (M, FM, and m), and special scores, will be significant components of Rorschach factors, and influential in their relationship to BSAG factors; (b) Longer initial response times (IRT) and fewer responses (R) will be associated with types of underreaction (UR) as will the production of fewer whole responses (W) and more common detail responses (D) than for types of overreaction (OR); (c) Aspects of OR will be associated with more integrated responses, reflected in higher DQ scores (+ and o) and more organizational activity (greater Zf); (d) A greater frequency of pairs and reflections (Fr) will be found among

variations or OR, as will more space responses (S), white C' and a higher frequency of plate rejections than among types of UR. (e) Variations of UR will be associated with more human movement (M), inanimate movement (m), and pure form (F). Gray, black and combined C', texture (T with shading and Tx, without), and diffuse shading (Y) responses will be more common than with variations of OR and will be affect-dominated, i.e. form will be secondary. M and m will be more of the passive, blocked and combined types, while FM will be more active. (f) Types of OR will correspond with the presence of more vista shading (V) and negative color, both occurring with form secondary or absent completely. FM and m will be the dominant forms of movement present and will be primarily active or blocked. (g) Frequency of human and animal detail contents (Hd and Ad) will exceed that of whole humans and animals (H and A) among groups of OR individuals. In addition, animals of the cold-blooded types (insects, amphibians, fish) will appear more often than mammals (large or small, domestic or wild).

CHAPTER IV

Results

The purpose of this study was to explore the relationship between two methods of assessment frequently used in schools for the classification of special education students. Personality variables as measured by the Rorschach Inkblot Test, and classroom behaviors as described by the Bristol Social Adjustment Guides (BSAG) were the two methods studied. By using techniques of multivariate analysis, this project attempted to reciprocally validate two instruments which are each representative of an equally popular, but often mutually exclusive school of thought. In this manner it was hypothesized that behavioral data could be provided that would serve as anchors to Rorschach findings, most often criticized as being hypothetical and without empirical support. Conversely, with personality characteristics offered as correlates to classroom behaviors, the breadth and applicability of behavioral observations could be enhanced as well. In sum, this study endeavored to take preliminary steps toward empirically validating a controversial method of personality assessment and simultaneously providing more generalizability to those behaviors observed in a classroom

setting. A primary goal of the study was to provide school psychologists with more competent and meaningful means of providing diagnostic evaluation of handicapped children in our schools.

It was hypothesized that variations of Underreaction (UR) and Overreaction (OR) would be found in this sample, but with some unique characteristics distinguishing this group from the original normative population. While the composition of Rorschach factors was not predicted, in keeping with the exploratory nature of this study, it was believed that psychologically meaningful factors would emerge which could be reliably scored. Several specific relationships between BSAG and Rorschach variables were predicted, however, in order to test several accepted assumptions concerning the use and interpretation of these instruments.

Findings will be reported categorically, moving from general to specific. First, the sample will be discussed in terms of background characteristics and morbidity. Next, results of intercorrelations will be presented separately for the Rorschach and for the BSAG, followed by respective factor analyses and measures of reliability for the Rorschach factors. Then, canonical correlations between the resulting factors will be presented, both globally and in the context of predicted relationships between the Rorschach and the BSAG. Finally, hit-rates generated by two series of multiple discriminant

analyses will be reported, comparing the ability of BSAG factors and various combinations of Rorschach factors to predict special education classification and psychiatric diagnosis.

Sample Characteristics

Data reported are based on 162 valid cases. A case was considered valid if a Rorschach had been administered, a teacher had completed a BSAG, and a confidential file was available providing the background and morbidity characteristics described here. A total of 26 teachers participated in this study, each completing a mean of 12 BSAGs. Thirty-one percent of the students were performing academically at the eighth through twelfth grade levels, and were part of the Upper School. Forty-three percent were from the Lower School, academically at the second through ninth grade levels. The Alternative Upper School, including students in need of even more academic and emotional support than offered elsewhere housed 11% of this group, as did the Alternative Lower School. The S.P.I.R.I.T. program, the most flexible unit involved in this study, contributed 4% of the participants. Boys constituted 83% of this sample. Ages ranged from 7 to 21 years, with a mean of 14.5 and a median of 15. A description of students by age, sex, school and participating number of teachers can be found in Table 1.

Participants had been attending this school from one month

Table 1

Age and Sex of Students and Number of Participating Teachers by School

School	Participating Teachers	N Students	$\bar{X}$ Obs PerTchr	N Boys	%	$\bar{X}$Age	Age Range	N Girls	%	$\bar{X}$Age	Age Range
Upper	10	50	5	39	78	16.8	14-20	11	22	16.4	15-18
Lower	8	69	9	59	86	12.5	7-15	10	14	12.2	8-14
Alt. upper	3	18	6	13	72	16.1	15-18	5	28	17.4	16-21
Alt. lower	2	18	9	17	94	12.6	10-15	1	6	12.5	12.5
S.P.I.R.I.T.	3	7	2	7	100	15.6	13-17	0	0	0	0
Total	26	162	6.2	135	83	14.7	7-20	27	17	14.6	8-21

to 10 years, with the average length of stay being 3.6 years. State of residence provided financial support for 91% of the students in this project. Local school districts supported 3%, 2.5% were supported by agencies, and .6% (1 student) received private monies. Information concerning funding for the remaining 2.5% was unavailable. The majority of these students resided in Pennsylvania (86%). Six percent were from neighboring states of New Jersey or Delaware, two students were from other states (1%), and state of residence could not be determined for the remaining 7%.

A total of 24 students (15% of the participants) were residents of the school at the time of this study. Parents of the total sample group were married in 51% of the cases, separated in 19%, and divorced in 13%. While 43% of the subjects were in the custody of their natural parents, 45% lived with two parents at the time of this study. Mothers had custody of 26% of the group, and resided with 20% of the participants. Fathers were chief custodian of 6% of the group, although only 4% actually lived with their fathers. Parents of seven students (4%) were widowed, and two students (1%) were orphans. Remarriages and nonmarital living arrangements accounted for 7% of the sample, and information concerning parent's marital status was unknown for 12 % of the total group. Agencies and relatives other than parents each had custody of 4% of these students, while adoptive parents were

legally responsible for 2%. Foster parents had custody of 1%, one student (.6%) was in custody of someone other than those categories already mentioned, and for 13% this information was unavailable or unknown. Six percent of the sample resided with relatives at the time of the study, 3% were in foster homes, and 6% lived in other agencies, with step-parents or in some setting not already mentioned.

There were three twins (but no twin pairs) in this sample, all of whom had at least one other sibling. While birth order was unstated for 22% of the group, 28% were first-born, 25% were second in birth order, and 11% were third. A position of fourth was occupied by 7% of participants, fifth by 3%, sixth by 2%, and seventh by 1%. Only children constituted 8% of the group, and 25% had one sibling only. Eighteen per-cent had two siblings, 14% had three, 6% had four, 3% had five, and 3% had from six to nine brothers and sisters.

Special education classifications were available for all but 3% of this sample. Fifty-one per-cent of the students in the study were identified as Socially and Emotionally Disturbed (SED), and 44% were categorized as Brain Damaged (BD). Only two students (1%) were classified as both SED and BD. These descriptive data concerning participants are summarized in Table 2.

At the time of the study, 28 students (17% of the total group) were currently taking or had a history of taking

Table 2

Characteristics of Sample

Descripte	X	SD	Range	F	%	Missing N	Missing %
Length of Stay (Mos.)	43.8	33.4	1-26			2	1
Funding:						4	2
State				148	91		
District				5	3		
Private				4	3		
Other				1	1		
State of Residence:						11	7
Pennsylvania				140	86		
New Jersey				5	3		
Delaware				4	3		
Other				2	1		
Current Residence:						2	1
Campus				24	15		
Both Parents				73	45		
Mother				32	20		
Father				7	4		
Relative				9	6		
Foster Home				3	3		
Other				10	6		
Custody:						21	13
Natural Parents				70	43		
Mother				42	26		
Father				10	6		
Foster Parents				2	1		
Adoptive Parents				3	2		
Relative				6	4		
Agency				7	4		
Other				1	1		
Parents Marital Status:						7	4
Married				83	31		
Separated				30	18		
Widowed				7	4		
Divorced				21	13		
Both Deceased				2	1		
Other				12	7		
Birth Order:						35	22
First				46	28		
Second				40	25		
Third				18	11		
Fourth				11	7		
Fifth				4	3		
Sixth				3	2		
Seventh				2	1		
Twin				3	2		
Number of Siblings:	2.2	1.6	0-9			34	21
Fire Setting History:						1	1
Yes				6	4		
No				155	96		
Special Education Classification:						5	3
Socially-Emotionally Disturbed				83	51		
Brain Damaged				72	44		
Both				3	1		

N = 162

medications. Of these, eight students (28%) were taking Mellarill, and four (14%) were taking Ritalin. Table 3 lists specifically the medications and the number of students taking each one. For further analyses, this variable was recoded as a dichotomy, reflecting the presence or absence of medication in each student's present or past history.

Reason for referral was recorded for 97 % of the sample. Five separate reasons were noted for 3% of the group, 15% had four reasons, 33% had three reasons, 65% had two reasons, and 32% had only one referral reason. This information was recorded verbatim from each student's file. A listing was made of all the reasons noted for this group. Fourteen all-encompassing and mutually-exclusive categories were then developed. When two separate examiners categorized the resulting Reasons for referral, a kappa coefficient (Cohen, 1960) of 0.85 was obtained, significant at $p < .001$. As agreement beyond chance had been determined, these categories were accepted as valid for descriptive purposes. The most frequently stated referral reasons were School/Classroom Adjustment problems (behavior inappropriate for the setting), School Failure (problems functioning academically), and Developmental Disability (specific deficits in reading, language, cognition, perception and memory). The 14 final reasons for referral and their frequencies can be found in Appendix F.

Table 3

Frequency and Percentage of Students Taking Medication

Medication	N	%	% Medication
Ritalin	4	2	14
Mellaril	8	5	28
Phenobarbital	1	1	4
Dilantin	1	1	4
Stelazine	2	1	7
Thorazine	1	1	4
Haldol	1	1	4
Tofranil	1	1	4
Deprekene, Tegretol, & Ritalin	1	1	4
Valium & Ritalin	1	1	4
Trantine & Mysoline	1	1	4
Prednisone & Theodin	1	1	4
Ritalin & Dilantin	1	1	4
History of Medication	2	1	7
Medication Recommended	1	1	4
Unspecified	1	1	4
	28	17%	
None	134	83%	

For 34% of the group, additional medical or other background information was available. This information was recorded verbatim and then categorized by two independent raters. Agreement beyond chance was achieved, with kappa = .86, $p < .001$. The resulting 16 categories and frequencies are recorded in Appendix I. Of the total group, 6% had a history of seizure disorders, and 7% were adopted. As these categories were primarily descriptive in nature, many had very low frequencies.

Psychiatric diagnoses were made for 70% of the students in this study. These were most often descriptive statements, with a diagnostic flavor, made by psychiatrists at intake. Occasionally there was a DSM-II coding, and more rarely was reference to a DSM-III diagnostic category. Diagnostic statements were recorded verbatim, and two clinicians collaborated to assign a current DSM-III code to each one. A total of 40 separate diagnoses were assigned. These were then grouped into psychologically meaningful categories, individually by each clinician. Agreement beyond chance was established for 21 categories (kappa = .85, $p < .001$). The 21 diagnoses and associated DSM-III codes, along with frequencies, can be found in Appendix G. While most students had no more than two separate diagnoses, in several cases there were additional descriptors. These were referred to as "Diagnostic Concomitants" and were grouped into 19 categories. When

categorical assignments were made by two separate examiners, a kappa coefficient of .82 was obtained, $p < .001$. These Diagnostic Concomitants are listed with frequencies in Appendix H. Each student could be assigned two diagnoses and two concomiants. Actual DSM-III diagnoses were exhausted first and then concomitants were assigned. While 70% of the entire group had one diagnosis, 27% had one diagnostic concomitant. Similarly, although 28% had two DSM-III diagnoses, only 6% had a second diagnostic concomitant. The most frequently assigned primary diagnostic category referred to organic brain damage or neurological dysfunction. This was found in 21% of all cases (30% of those with a psychiatric diagnosis), and it was followed in frequency by Socialized Conduct Disorder, Aggressive type, assigned to 8% of all cases, or 11% of the diagnosed group. The category defined as Learning Disability, Developmental Delay, including specific developmental disorders, learning deficits, etc. was the secondary diagnosis of greatest frequency, assigned to 10% of the population, or 14% of the group receiving a psychiatric diagnosis. The diagnostic concomitant named Emotional Disturbance was assigned in conjunction with one or two DSM-III diagnoses to 11% of the total sample, or 15% of those students receiving some psychiatric diagnosis.

To enhance further statistical analyses, Psychiatric Diagnoses were recoded to reflect the most stable DSM-III

categories for children. All conduct disorders were considered as a single group (old variables 8 through 14, DSM-III codes 312.0 through 312.8). Emotional disorders constituted the second group and included variables 15 through 17, DSM-III codes 313.0 through 313.82. The third group reflected attention deficit disorders (variables 18 and 19, codes 314.0 and 314.01), and category four, Other, included all remaining diagnostic categories. Though extremely reliable, Mental Retardation, DSM-III code 317, was not included here because of its frequency of one. Frequencies and percentages for these four new categories can be found in Table 4.

Standardized achievement test data were available from a group administration of the Comprehensive Test of Basic Skills (CTBS) (McGraw-Hill, Inc., 1981) in March of 1982. All but 19 students had taken this test. While the participating school was essentially nongraded, with heterogeneous age and intelligence grouping, for test purposes students were assigned an academic grade of two through 12. The majority of students (63%) were considered to be in 8th, 9th, 10th and 11th grades, with 8.5 as the mean grade. Scores were recorded in the form of Normal Curve Equivalents (NCEs) for Reading, Language, Math, Science, and Social Studies. The mean score for Reading was 14.5; for Language, it was 15.6. For Math, the mean was 13.6; for Science, it was 20.2; and for Social Studies 21.6 was the mean. On an NCE scale, 50 is the mean, and the standard

Table 4

Psychiatric Diagnoses Recoded to Depict Conduct Disorders, Emotional Disorders, Attention Deficit Disorders

Disorder	DSM-III CODE	N	% Disorders
Conduct	312.0-312.8	38	24
Emotional	313-0-313.82	16	10
Attention Deficit	314.0-314.01	16	10
Other		90	56
		160	

deviation is 10. Table 5 contains measures of central tendency for achievement test data.

Approximately 95% of all students had been administered some measure of intelligence. The WISC-R was used to assess 80% of the group, the Stanford-Binet for 6%, the WISC for 10%, and other measures (including the WPPSI, Slosson, and WAIS) in 4% of all cases. Test administration occurred from September 1979 through June 1982 in 47% of cases; from September 1976 through August 1979 in 30% of cases; and prior to September 1976 in 23% of cases. To compare results from different tests, Sattler's Classification Ratings for IQs on Stanford-Binet, Wechsler Scales, and McCarthy Scales (1982, p. 607) were used. Of the group to whom IQ tests were administered, 10% were classified as Mentally Defective, 16% as Borderline Defective, 30% as Low Average, 35% as average, 6% as High Average, and 3% as Superior. Intelligence test data are summarized in Table 6.

Bristol Social Adjustment Guides Data

Valid BSAG's were available for 157 students. Two teachers had failed to complete their observations after five of their students had been administered Rorschachs. The percentage of females in the sample (17%) did not warrant separate analysis by sex. Similarly, 31% of this group (50 students) exceeded the age constraints of the BSAG, i.e., were from 17 to 21 years of age. Rather than reduce sample size by examining the older students separately, in keeping with the

Table 5

Standardized Achievement Test Data[1]

Variable	$\bar{X}$	SD	Range	N	%	Missing N	Missing %
Overall Grade Rating	7.5	3.5	2-12			19	12
2				3	2		
3				4	3		
4				5	3		
5				5	3		
6				10	6		
7				9	6		
8				23	14		
9				29	18		
10				28	17		
11				22	14		
12				5	3		
*Reading Standard Score	551.9	233.8	236-829			25	16
*Reading NCE	14.5	18.6	1-80			39	24
Reading Level	5.6	3.1	2-10			19	12
*Language Standard Score	490.5	274.7	416-809			56	34
*Language NCE	15.6	18.2	1-88			56	34
Language Level	5.8	3.0	2-10			19	12
*Mathematics Standard Score	554.2	247.8	219-741			29	18
*Math NCE	13.9	17.0	1-81			29	18
Math Level	5.9	2.9	2-10			19	12
*Science Standard Score	494.4	278.5	273-815			54	33
*Science NCE	20.2	20.8	1-97			54	33
Science Level	5.8	3.0	2-10			19	12
*Social Studies Standard Score	513.6	286.1	113-902			53	33
*Social Studies NCE	21.6	18.9	6-96			55	34
Social Studies Level	5.8	3.0	2-11			19	12

[1]From March, 1982 administration of CTBS, Form U.

*To preserve distribution, scores of zero and missing data were merged.

Table 6

Intelligence Test Data, Frequencies and Percents

			Missing	
	N	%	N	%
Test Administered			8	5
WISC-R	123	89		
Stanford Binet	9	6		
WISC	15	10		
Other	7	4		
Date Administered			8	5
9/79 to 6/82	72	44		
9/76 to 8/79	47	29		
Prior to 9/76	35	22		
IQ Classification*			9	6
Mental Deficient	16	10		
Borderline	25	15		
Low Average	46	28		
Average	53	33		
High Average	9	6		
Superior	4	3		

*From Sattler, J. (1982)

exploratory nature of the study, the entire group was analyzed together.

The absence of a behavior was denoted by 1, while 2 indicated the presence of a phenomenon. Measures of central tendency for each of the 110 statements indicative of maladjusted behavior can be found in Tables 7 through 11 and in Appendix J. The mean for the sum of all Underreaction items (Unract) was 4.5, while the mean for Overreaction (Ovract) was 12.0 (see Table 12). This places the group under study at the 24th rank percentile relative to the normative group for Unract and at the 12th percentile for Ovract. These reflect a mean percentile rank computed by adding the percentile rank for boys to that for girls and dividing by two.

In completing a BSAG, a teacher records observations not only of classroom behavior but of some auxiliary characteristics as well. These include General Health, Speech, Size, Physical Appearance, and School Achievement in Reading and Math. A summary of descriptors and their frequencies for this group can be found in Table 12. For further analyses, the Speech variable was recoded into a dichotomy reflecting the presence (1) or absence (0) of some observable difficulty in speech. Thus, 19% of the group had no noted abnormalities, while 81% had some unusual aspect to their speech.

Before factor analysis was employed to reduce the BSAG data, behaviors that were observed in less than 5% of the

Table 7

Component Items with Frequencies, Distributions and Varimax Rotated Factor Loadings for BSAG Factor I, Hostile-Socially Aggressive

Item	Frequency N	Frequency %	Skewness	Kurtosis	Loading
(P) Starts off others in scrapping and roughplay, disturbs other's games	18	11	0.95	3.77	.70
(P) Tries to dominate and won't cooperate when he/she can't get own way	25	16	0.84	1.96	.70
(H) Squabbles, makes insulting remarks	57	36	0.13	-0.74	.62
(P) Never really gets down to work, soon switches to something else	24	15	0.86	2.16	.61
(P) Bad sportsman	19	12	0.94	3.44	.59
(P) Bad loser	28	18	0.78	1.43	.58
(V) Lies without compunction	22	14	0.90	2.62	.58
(P) Attacks other children viciously	11	7	0.87	7.18	.58
(Q) Borrows books without permission	22	14	0.90	2.62	.57
(H) May spoil work purposely	19	12	0.94	3.44	.57
(V) Destructive, defaces with scribbling	22	14	0.90	2.62	.56
(V) Has stolen in school in cunning underhand way	14	9	0.95	5.41	.53
(P) Snatches things from other children	22	14	0.90	2.62	.53
(H) Flies into a temper if provoked	62	39	0.02	-0.85	.53
(Q) Hit and miss approach to problems	30	19	0.74	1.13	.52
(P) Tells on others to try to gain teacher's favor	21	13	0.93	5.94	.52
(V) Damage to personal property (care, teacher's belongings, etc.)	14	9	0.95	5.41	.51
(H) Becomes antagonistic with other children	24	15	0.86	2.16	.51
(Q) Overtalkative (tires with constant chatter)	38	24	0.56	0.24	.50
(P) Misuses companionship to show off or dominate	16	10	0.96	4.51	.49
(P) Tries to push in front of smaller children	17	11	0.96	4.12	.48
(H) Bears grudge, regards punishment as unfair	30	19	0.73	1.13	.48
(H) Seems to go out of way to earn disapproval	23	15	0.88	2.38	.46
(H) Tries to argue against teacher	26	16	0.82	1.77	.46
(V) Is often the center of a disturbance	37	24	0.58	0.33	.46
(H) Openly misbehaves in front of teacher	56	36	0.15	-0.72	.45
(Q) Inclined to fool around	37	24	0.58	0.33	.44
(V) Damage to public property	17	11	0.96	4.13	.42
(Q) Shouts or waves arms before thinking	24	15	0.86	2.16	42
Eigenvalue					34.58
Coefficient alpha					.86
Mean factor score			4.58		
Standard deviation			5.11		
Subjects with factor scores > 1	127	81			
Subjects with factor scores = 0	30	19			

Note: Items are altered for brevity and to illustrate specific social contexts. To examine items verbatim, consult revised BSAG forms. Letters in parentheses refer to syndrome of which item was initially a member: (Q) = Inconsequence, (H) = Hostility, (P) = Peer-Maladaptive, (V) = Nonsyndromic Overreaction.

N = 157

Table 8

Component Items with Frequencies, Distributions and Varimax Rotated Factor Loadings for BSAG Factor II, Impulsive-Disruptive

Item		Frequency N	Frequency %	Skewness	Kurtosis	Loading
(Q)	Attends to anything but work	55	35	0.28	-0.69	.69
(H)	Too restless to heed for even a moment	12	8	0.91	6.52	.66
(Q)	Twists in seat, climbs on desk, slips to floor	44	28	0.42	-0.20	.65
(Q)	Hails teacher loudly	48	31	0.33	-0.42	.63
(Q)	Presses for jobs but doesn't do them properly	19	12	0.94	3.44	.63
(Q)	Constantly restless	38	24	0.56	0.24	.63
(Q)	Shows off	49	31	0.31	-0.46	.62
(Q)	Doesn't understand should stay in seat	15	10	0.96	4.94	.61
(Q)	Gets into tricks to gain attention	45	29	0.40	-0.26	.61
(Q)	Never gets down to work, switches task	20	13	0.93	3.15	.57
(U)	Foolish or dangerous pranks with gang	12	8	0.91	6.52	.57
(H)	Openly misbehaves in front of teacher	56	36	0.15	-0.72	.56
(Q)	Misbehaves when teacher is with others	49	31	0.31	-0.46	.55
(Q)	Tells fantastic tales	32	20	0.69	0.87	.55
(Q)	Inclined to fool around	37	24	0.58	0.33	.53
(Q)	Never gets down to solid work	18	11	0.14	3.77	.51
(H)	Goes out of way to earn disapproval	23	15	0.88	2.38	.50
(Q)	Seeks help when could manage alone	48	31	0.33	-0.42	.47
(Q)	Brings objects found which are not lost	8	5	0.63	9.71	.46
(Q)	Shouts out or waves arms before thinking	24	15	0.86	2.16	.44
(Q)	Overfriendly with teacher	20	13	0.93	3.15	.44
(P)	Tries to buy favors with others	16	10	0.96	4.51	.44
(V)	Often center of a disturbance	37	24	0.58	0.33	.44
(P)	Tries to push in front of smaller children	17	11	0.96	4.12	.43
(Q)	Overtalkative, tires with constant chatter	38	24	0.56	0.24	.42
(Q)	Invents silly ways of doing things	20	13	0.93	3.15	.42
(Q)	Responds momentarily, but it doesn't last	52	33	0.24	-0.59	.42
	Eigenvalue					6.60
	Coefficient alpha					.85
	Mean factor score			5.25		
	Standard deviation			5.35		
	Subjects with Factor Score > 1	30	83			
	Subjects with factor Score = 0	27	17			

Note: Items are altered for brevity and to illustrate specific social contexts. To examine items verbatim consult revised BSAG forms. Letters in parentheses refer to syndrome of which item was originally a member. (Q) = Inconsequence, (H) = Hostility, (P) = Peer Maladaptive, (V) = Non-Syndromic Overreaction and (N) = Neurological. N = 157

Table 9

Component Items, Frequencies, Distribution and Varimax Rotated Factor Loadings for BSAG Factor III, Passive-Detached

Item	Frequency N	Frequency %	Skewness	Kurtosis	Loading
(U) Too timid to be troublesome in class	9	6	0.74	8.75	.66
(U) Too timid to stand up for self, or even get into argument	25	16	0.84	1.96	.65
(U) Shy but would like to be friendly	23	15	0.88	2.38	.64
(U) Sits quietly and meekly at desk	24	15	0.86	2.16	.62
(U) Associates with only one child, ignores others	17	11	0.96	4.12	.58
(R) Difficult to get a word out of him/her	9	6	0.74	8.75	.56
(U) So quiet you can't be sure he/she's following	21	13	0.92	2.87	.56
(U) Needs encouragement to participate	30	19	0.74	1.13	.51
(R) Lets the more forward push ahead	11	7	0.87	7.18	.50
(U) Wants adult interest, but can't put self forward	11	7	0.87	7.18	.49
(U) Waits to be noticed	37	24	0.58	0.33	.47
(U) Too shy to ask for help	9	6	0.74	8.75	.47
(H) Has stolen in a way getting caught is likely	9	6	0.74	8.75	.47
(W) Never thinks of greeting teacher	10	6	0.81	7.91	.45
(U) Chats only when alone with teacher	11	7	0.87	7.18	.44
(U) Seems afraid to begin new task	25	16	0.84	1.96	.44
(N) Very jumpy and easily scared	16	10	0.96	4.51	.43
(Q) Brings objects found, though they're not really lost	8	5	0.63	9.71	.42
(N) Gets confused and tongue tied	21	13	0.92	2.87	.41
(W) Never appeals to adult even when hurt	10	6	0.81	7.91	.41
(W) Remains aloof in own world	17	11	0.96	4.12	.40
(U) Likes sympathy but reluctant to ask	50	32	0.28	-0.51	.40
Eigenvalue					3.35
Coefficient alpha					.58
Mean factor score				2.61	
Standard deviation				2.53	
Subjects with factor score > 1		120	76		
Subjects with factor score = 0		37	24		

Note: Items are altered for brevity and to illustrate specific social contexts. To examine items verbatim, consult revised BSAG forms. Letters refer to syndrome of which item was originally a member: (U) = Unforthcoming, (W) = Withdrawn, (R) = Immaturity-dysynchronic underreaction, (Q) = Inconsequence, (H) = Hostility, and (N) = Neurological. N = 157

Table 10

Component Items with Frequencies, Distributions and Varimax Rotated Factor Loadings for BSAG Factor IV, Withdrawn-Lethargic

Item	Frequency N	Frequency %	Skewness	Kurtosis	Loading
(W) Cut off from people, can't get near as person	16	10	0.96	4.51	.64
(W) Distant, never wants to talk	8	5	0.63	9.71	.64
(D) Can't get his/her attention	12	8	0.91	6.52	.64
(W) Cannot bring self to socialize	12	8	0.91	6.52	.63
(D) Too lacking in energy to ask for teacher's help	11	7	0.87	7.18	.63
(W) Never makes social relationships good or bad	15	10	0.96	4.94	.58
(D) Difficult to stimulate; lacks energy	25	16	0.85	1.96	.56
(D) Indifferent facing new tasks	12	8	0.91	6.52	.53
(D) Apathetic in class	22	14	0.90	2.62	.53
(D) Too lethargic to be troublesome	10	6	0.81	7.91	.51
(W) Remains aloof, in own world	17	11	0.96	4.12	.51
(D) Sits lifelessly most times	16	10	0.96	4.51	.50
(R) Keeps suspicious distant	12	8	0.91	6.52	.48
(R) Timid, poor-spirited, can't let self go	10	6	0.81	7.91	.48
(W) Distant, ignores others	20	13	0.93	3.15	.48
(D) Doesn't care whether teacher sees work	12	8	0.91	6.52	.46
(N) Gets confused and tongue-tied	21	13	0.92	2.87	.41
Eigenvalue					2.46
Coefficient Alpha					.69
Mean factor score			1.68		
Standard deviation			2.35		
Subjects with factor score ≥ 1	96	61			
Subjects with factor score = 0	61	39			

Note: Items are altered for brevity and to illustrate specific contexts. To examine items verbatim, consult revised BSAG form. Letters in parentheses refer to syndrome of which item was originally a member: (W) = Withdrawn, (D) = Depressed, (R) = Nonsyndromic Underreaction, (N) = Neurological.

N = 157

Table 11

Component Items with Frequencies, Distributions and Varimax Rotated Factor Loadings for BSAG Factor V, Moody

Item	Frequency N	Frequency %	Skewness	Kurtosis	Loading
(H) Will help unless in a bad mood	46	29	0.37	-0.31	.63
(H) Will answer questions unless in bad mood	45	29	0.40	-0.26	.63
(H) Sometimes in a bad mood	54	34	0.19	-0.66	.63
(H) Can be surly greeting teacher	29	18	0.76	1.27	.62
(H) Inclined to be moody	33	21	0.67	0.75	.59
(H) Uses bad language he/she knows will be disapproved of	51	32	0.26	-0.55	.52
(H) Has uncooperative moods	54	34	0.19	-0.66	.47
(U) Chats only when alone with teacher	11	7	0.87	7.18	.46
(V) Follower in mischief	26	17	0.82	1.77	.44
Eigenvalue					2.25
Coefficient alpha					.66
Mean factor score			2.07		
Standard deviation			2.20		
Students receiving factor score ≥ 1	110	70			
Students receiving factor score = 0	47	30			

Note: Items are altered for brevity and to illustrate specific social contexts. To examine items verbatim, consult revised BSAG from. Letters in parentheses refer to syndrome of which item was originally a member. (H) = Hostility, (V) = Nonsyndromic Overreaction, (U) = Unforthcoming. N = 157

Table 12

Frequencies and Percents of BSAC Auxiliary Descriptors, Sum Under-Reaction and Sum Over-Reaction

				Freq = 0		Freq ⩾ 1			
	X̄	SD	Range	N	%	N	%	Adj.X̄	Adj.%
Sum Under-Reaction	4.52	4.12	0-19	25	16	132	84	5.37	
Sum Over-Reaction	12.04	10.64	0-50	10	6	147	94	12.86	
General Health	1.31	0.95	0-5	11	7	146	93	1.45	
Speech				99	63	58	37		
Stutters						18	11		31
Mumbles						12	21		21
Jumbled						3	2		5
Incorrect/rambling						5	3		9
Babyish						6	4		10
Other						14	9		24
Size				15	10	142	90		
Tall						15	9		10
Ordinary						89	57		63
Small						19	12		13
Unusually Small						2	1		1
Very Fat						4	2		3
Very Thin						2	1		1
Other						16	10		11
Physical Appearance				16	10	141	90		
Attractive						98	62		69
Not So Attractive						29	18		20
Undernourished						5	3		3
Abnormal Feature						2	1		1
Other						12	8		8
Reading Achievement				5	3	152	97		
Good						27	17		8
Average						55	35		36
Poor						62	39		41
Can't Read						3	2		2
Other						5	3		3
Arithmetic Achievement				6	4	151	96		
Good						28	18		18
Average						46	29		30
Poor						72	46		48
Completely Incompetent						2	1		1
Other						3	2		2

Note: Adjusted means and percents use N Freq. ⩾ 1 as denominator and reflect distribution of variables among those receiving a score for that variable. N = 157

sample were identified. Seven variables had a frequency of less than eight and were excluded from further analysis. The seven items removed were: "avoids contact both with teacher and with other children," "always sluggish, lethargic," "is too unaware of people to greet," "shrinks from active play," "makes aimless movements with hands," "has unwilled twitches, jerks," and "bites nails badly." The first four of these items were from the Unract scale, and the remaining three were part of the Neurological grouping. Frequencies of these items among the participants are recorded in Appendix J.

Principal-component factor analysis was performed on the 103 BSAG items with frequency of greater than seven. Factors showing an eigenvalue of greater than or equal to one were rotated according to Kaiser's varimax criterion. This yielded 26 factors, and the process was repeated limiting the maximal number of factors rotated to ten, six and five in an effort to discover a factor structure that would remain relatively invariant across rotations. In fact, moving from the six- to the five-factor solutions resulted in several changes in the factor structure. Factors I and II essentially changed places, with the exception of three items. Of these, one remained a part of Factor I, one reappeared on Factor III, and one item disappeared completely. Furthermore, Factors III and IV exchanged places from the ten- to the six-factor solutions, with two items from the original Factor III remaining with that

factor, four items appearing for the first time with the six-factor solution, and again on the five-factor solution, and one item was dropped completely. Factor V remained stable throughout all analyses, and by the six-factor solution, Factor VI had only one item with a significant loading. Thus, the five-factor solution, including a total of 93 BSAG variables, was chosen as most stable.

In order to determine the internal consistency of each of these factors, alpha coefficients were computed based on the variance of each of the items comprising a factor in relation to the variance of the total factor across all items. Factor I included 29 items from the Inconsequence, Hostility, Peer-Maladaptiveness, and Non-Syndromic Over-reaction scales, and it was named Hostile-Socially Aggressive. The mean score for Factor I was 4.58, and alpha was 0.86.

Factor II primarily comprised items from the Inconsequence scale, with a few items from Hostility, Peer-Maladaptiveness, and Non-syndromic Over-reaction, plus one from the Neurological cluster ("too restless and overactive to heed even for a moment"). The name Impulsive-disruptive seemed to capture the essence of its components. With a total of 27 items, the mean score for Factor II was 5.25 with an alpha of 0.85.

Items from the Unforthcomingness scale along with several from Withdrawal, Non-syndromic Underreaction, Inconsequence

("brings object he or she has found, though they are not really lost (desire for approval or attention)"), Hostility ("has stolen in a way that he would be bound to be found out") and Neurological ("gets confused and tongue-tied," and "very jumpy and easily scared"), comprised the 22-item Factor III, described in name as Passive-detached. The mean score for Factor III was 2.61 and alpha was 0.58, the lowest of all factors.

Factor IV included 17 items, mostly from the Withdrawal and Depression scales, but with two from Non-syndromic Underreaction, "keeps a suspicious distance," and "timid, poor-spirited, can't let him/herself go", and one from the Neurological scale, "gets confused and tongue-tied". The mean score for Factor IV was 1.68, and alpha equalled 0.69. Withdrawn-lethargic seemed to best describe these items.

Factor V had the fewest number of items, nine. All but two were from the Hostility scale. One item was from the Unforthcomingness scale, "chats only when alone with teacher," and the other was from Non-syndromic Over-reaction, "follower in mischief (other deviant behavior)." Alpha for Factor V was 0.66, and the mean score was 2.07. The descriptor, Moody, best captured this grouping of behaviors. Tables 7 through 11 contain the specific BSAG items constituting each of these five factors, and Table 12 include summary data for the BSAG descriptors and Ovract and Unract scale scores.

Rorschach Data

Descriptive statistics. A total of 162 students offered 2,961 responses to the Rorschach. Each response was recorded individually in terms of 16 parameters to permit maximum flexibility in analysis: Rorschach plate (I through X), response number (1 through 51), rejection (Rej), additional response (Add), changed response (ΔR), initial response time (IRT), card position (Pos1 through Pos4), location (W, WS, D, DS, Dd, DdS, DW), developmental quality (DQ), determinants, form quality (FQ), pair ((2)), popular (P), contents, Z-score, and special score.

There was a mean of 18.1 responses (R) to the entire Rorschach and thus an average of 1.8 responses per plate. While the number of total responses ranged from 6 to 51, the mean R per plate ranged from 1.46 on plate VI to 3.07 to plate X. Nineteen students (12% of the group) had rejections or offered no response to the Rorschach plate before them. Of these, 14 rejected one plate, 2 students each rejected two and three plates, and 1 student rejected four plates. Appendix K presents a breakdown of four specific types of rejection and the number of respondents making each type. Additional responses, offered during the inquiry and not included in any formal analyses, were made by 25 students (15% of all the participants). One addition was made by 17 students, while six students had two additional responses, and two students had

three additions. The four types of additions and their frequencies are listed in Appendix L. When a student changed or rejected a response during the inquiry portion of Rorschach administration, the nature of this change was noted. Nine varieties of changes were made by 32 (20%) of the participants. Most of these (22 students) made only one change, while six made two changes, three made three changes, and one student changed responses four times. The nine types of response changes and corresponding frequencies can be found in Appendix M. Two students offered more than 51 responses, which was the maximum scored and recorded for this study. Note was made of this in the category of Response additions. The Rorschach data were considered in their entirety for this study, leaving any per plate-analyses for future investigation.

A descriptive summary of Rorschach scores can be found in Table 13. Mean initial response time (IRT) was computed by summing IRT, recorded in seconds for all first responses to each plate, across plates and dividing by total number of plates responded to. Thus no IRT was recorded where plate rejections were made. The mean IRT was 11.2, with a standard deviation of 7.0. For the achromatic plates (I, IV, V, VI, VII) mean IRT was 10.56, while for the chromatic plates (II, III, VIII, IX, X) it was 11.8.

Respondents in this study were handed each Rorschach plate in the upright position, and they made at least one response in

Table 13

Descriptive and Distribution Statistics for Rorschach Data

Score	% of TR	X	SD	Range	F	Skewness	Kurtosis	F = 0 N	F = 0 %	F ≥ 1 N	F ≥ 1 %	Adj X*
Total Number Responses - R		18.10	7.99	6-51	2933	1.52	3.23	0	0	162	100	18.10
Initial Response Time (in seconds) IRT		11.22	6.98	21-60.4	1817	2.85	15.33	0	0	162	100	11.22
Card Position:	72	13.10	7.26	1-51	2123	1.71	5.16	0	0	162	100	13.10
^ <>	21	3.82	4.50	0-24	619	1.57	2.65	48	30	114	70	8.84
V	2	0.41	0.90	0-5	66	2.57	6.82	125	77	37	23	1.78
∋^	4	0.77	1.09	0-5	125			87	54	75	46	1.67
Rejections (Rej)	1	0.17	0.56	0-4	28	4.24	20.65	143	88	19	12	1.47
Additional Responses (Add)	1	0.22	0.56	0-3	35	2.93	8.79	137	85	25	15	1.40
Response Changes (ΔR)	2	0.29	0.68	1-4	47	2.86	8.98	130	80	32	20	1.47
Location:												
W (whole)	37	6.65	3.10	0-19	1078	0.93	1.54	1	1	161	99	6.70
WS (whole with white space)	4	0.67	0.90	0-5	110	1.62	3.57	86	53	76	47	1.45
D (common detail)	46	8.30	6.80	0-37	1345	1.49	2.82	5	3	157	97	8.57
DS (common detail with space)	2	0.46	0.84	0-6	74	2.80	12.15	111	68	51	32	1.45
Dd (unusual detail)	10	1.74	2.00	0-11	282	1.76	3.60	50	31	112	69	2.52
DdS (unusual detail with space)	1	0.26	0.59	0-4	42	3.09	12.85	128	79	34	21	2.00
DW (confabulated whole)	0				2			160	99	2	1	
Developmental Quality												
+ synthesized	18	3.25	2.98	0-18	526	8.88	3.87	26	16	136	84	3.87
o consistent	55	9.90	5.56	2-35	1604	1.24	2.33	0	0	162	100	9.90
v vague	10	1.74	1.67	0-9	281	1.31	2.87	43	26	119	74	2.36
- arbitrary	18	3.22	2.77	0-15	522	1.25	2.02	23	14	139	86	3.76
Form Quality												
No form	1	0.24	0.63	0-4	39	3.41	13.48	134	83	28	17	2.29
+ superior	1	0.24	1.04	0-12	38	9.33	102.13	140	86	22	14	1.12
o ordinary	68	12.24	5.94	2-41	1983	1.11	2.60	0	0	162	100	12.24
w weak	12	2.12	2.20	0-13	344	1.53	3.53	44	27	118	73	2.92
- minus	18	3.26	2.87	0-16	529	1.54	3.54	21	13	141	87	3.75
Populars - P	20	3.65	1.76	0-9	591	0.42	0.12	2	1	160	99	3.69
Near Popular (P)	5	0.96	1.00	0-4	155	1.01	0.09	65	40	97	60	1.64
Pairs	32	5.84	4.72	0-24	946	1.26	1.88	13	8	149	92	6.35
Organizational Activity (Z)												
Zf (frequency)	50	9.12	4.01	0-27	1477	1.01	2.42	1	1	161	99	9.17
ZD (difference)		3.08	2.53	0-16	498.5			9	6	153	94	3.20
Special Scores	17	3.03	3.82	0-28	453			35	22	127	78	3.57

*Adjusted mean is computed by dividing frequencies by total number students receiving a score or one or more

this position (Position 1). Of the averaged 18.1 responses, 13.1 or 72% were in Position 1. Seventy per cent of respondents turned the card upside-down before responding, Position 2. An average of 3.8 responses (21% of R) were made in this position. Position 3 was recorded when the subject used either the right or left side of the plate as top. It was used by 23% of the participants in this study and yielded a mean of .41 (2% of the total mean R). Position 4 indicated that the plate had been turned completely around one or more times before a response was offered to it in the upright position. In other words, Positions 1 and 4 both implied use of the Rorschach card in its original position, but Position 4 reflected the fact that the card had been manipulated prior to response, while Position 1 did not. While 46% of all subjects made from one to five Position 4 responses, they accounted for 4% (.77) of the total mean R. Thus, a total of 76% of all responses (13.8 of 18.1) were made to the Rorschach plates in the upright position.

All but one of the students in this population used the entire blot for from 1 to 19 of their responses. The mean for Whole responses (W) was 6.6 (36% of the total mean R). Whole responses with white space (WS) were made by 47% of subjects, had a mean occurrence of .68 (4% of mean R), and a range of one to five. Common Detail responses (D) accounted for 46% of mean R, had an average frequency of 8.3, had a range of one to 37,

and were made by 97% of respondents. From one to six responses using common details with white space (DS) were made by 32% of this group. The average number of DS responses was .46 (3% of mean R). Responses to uncommon details (Dd) were made by 69% of participants. Frequencies ranged from one through 11, with a mean of 1.74 (10% of mean R). Uncommon detail with white space responses (DdS) were made by 21% of students in this project. The mean for DdS was .26 (1% of mean R). The range was one to four. Confabulated whole responses (DW) were made by only two students, and the frequency was considered too low to be included in future analyses. On the average then, in this group, 8% of responses involved the use of white space (WS + DS + DdS).

Responses with an integrated developmental quality (DQ+), involving synthesis or relationship between two or more discrete blot areas, were given by 84% of this group. The mean for DQ+ was 3.2 (18% of mean R). All students (100%) offered ordinary responses (DQo), consistent with the form and structure of the blot itself, which ranged in frequency from two through 35, and had a mean of 9.9 (55% of mean R). Ordinary responses do not require the complex cognitive activity found in the DQ+ response, but they imply that the percept has fairly specific form requirements which have not been disregarded. Vague responses (DQv), where the percept has no specific form requirements, accounted for 9% of mean R, and

were given by 73% of participants from one through nine times per record. The mean for DQv was 1.7. Eighty-six per cent of the entire group offered arbitrary responses (DQ-), where the form limitations of the area used were grossly inconsistent with the percept reported. The mean for DQ- was 3.2 (18% of the mean R), and the range of frequencies was one to 15.

Responses involving superior form quality (FQ+) were made by 14% of the subjects in this study. These well developed and articulated responses constituted only 1% of the total mean R, with a mean frequency of .24 and a range of from one through 12. Ordinary responses (FQo), where the percept and location are easy to see and congruent, were given by all (100%) of participants. The mean for FQo was 12.2 (67% of mean R) and frequencies ranged from two through 41. Weak form quality (FQw), where the object is not easily perceived and a shift away from congruence between content and blot area is evident, occurred in 73% of cases. Frequencies ranged from one through 13, with a mean for FQw of 2.1 (12% of mean R). A total of 87% of respondents offered percepts assigned an arbitrary form quality score (FQ-), implying total or near total disregard for the structure of the blot area used or distorted and unrealistic use of the form of the inkblot. The mean for FQ- was 3.3 (18% of mean R), with frequencies ranging from 1 through 16. A form quality score implying the absence of form in the percept, FQO, was assigned to 1% (.24) of the 18.1

responses constituting mean R. From one to four FQO responses were made by 17% of participants.

Pairs were reported by 92% of subjects in this study. Frequencies ranged from one through 24, with a mean of 5.8. Thus 32% of mean R involved pairs or reporting the two sides of the blot as identical.

All but two students (99%) reported from one to nine Popular responses (P), those percepts seen once in every three records. The average number of populars was 3.6 for this group (20% of mean R). In addition, 60% of this sample offered an average of .96 near populars (5% mean R). These responses are defined as very similar to but not completely identical to real populars. The two subjects who saw no populars did see at least one near popular.

When subjects cognitively organized percepts and described meaningful relationships between elements of the inkblot, a Z-score was assigned implying organizational activity. Frequency of Z-score (Zf) assignment ranged from two through 27, with only one subject reporting no organizational activity at all. The mean number of Z-scores per record was 9.1, indicating 50% of responses involved some organizational activity. In addition, a difference score was computed (ZD) between the sum of Z-scores assigned, and a table value based on Zf (Exner, Weiner & Schuyler, 1976, p. 111). The amount of difference was considered more important than direction of difference, and ZD

scores were added together, disregarding their sign. Thus, ZD scores ranged from 0 through 16, with a mean ZD of 3.0.

Special scorings, assigned to reflect unusual or idiosyncratic verbalizations, occurred in 88% of this sample. They ranged in frequency from one to 28, and had a mean frequency of 3.0. Thus, 16% of responses included some special scoring. In this study 19 varieties of special score were recorded. The most common type of special score was Personal (PER), where reference to personal knowledge or experience was made in conjunction with a response by 34% of this group. An additional 2% made near-personal responses. References to television, movies, fictional or fantasy characters or even music in conjunction with a response (scored TV) were made by 28% of the group, with another 2% rendering near-TV responses. Deviant verbalizations (DV) characterized by idiosyncratic modes of expression and distortions of language, occurred in 23% of this group. Furthermore, DV approximations were made by 9% of participants. Incongruous aspects of the blot or perceptual images were combined into a single object by 14% of this group, and Incongruous combination (INCOM) was scored. An additional 7% had scores of near-INCOM. Autistic logic (ALOG), or the spontaneous use of strained logic to explain a response, was assigned to 16% of students, with near-ALOG scores given to another 5%. Fabulized combinations (FABCOM), implausible situations or relationships are described between two or more

separate blot details, were expressed by 14% of these subjects, and 4% offered responses scored near-FABCOM. The repetition of contents or entire responses within a single plate or across blots in a total Rorschach record, was scored as Perseveration (PSV). While PSV was noted in 9% of subjects, responses approaching perseveration, but failing to meet all scoring criteria, were found in an additional 14% of the group. When participants were critical of the blots, implying they were strange, weird, or not right in some way, CRIT was scored. Sever percent of the group received this score. Contamination (CONTAM) was scored when two or more cognitive impressions were fused into a single response where blot area used was without anchor in reality. In this study, CONTAM was assigned to 3% of the sample, while an additional 2% offered responses that were near-contaminations. Transparency (TRANSP), scored when typically solid objects are seen through as if transparent or translucent, was recorded in 3% of these subjects, and additionally as near-transparencies in 1%. As even "near-special scores" implied some idiosyncratic form of expression, though to a lesser degree than the special scores themselves, all occurrences of special scorings were considered with equal weight, and used summatively as a single Special Score variable in further analyses. Frequencies of all specific special scores are recorded in Appendix N.

Factor Analyses. For every response offered, from one to

five distinct determinant scores could be assigned. A total of 14,645 determinants were scored for 2,933 responses. The 59 types of determinants are listed and described in Appendix O. Of these, 19 had frequencies ranging from 0 to 7 and were considered too unstable to be included in further analyses. These are marked with an asterisk (*) in Appendix O. In order to reduce the data into statistically and psychologically meaningful groups, the remaining 40 determinants with frequencies of eight or greater were subjected to a series of principal-component factor analyses. Significant factors were defined as those showing eigenvalues of greater than or equal to one, and 21 factors were extracted and rotated by Kaiser's varimax criterion. Factor analysis was repeated limiting number of factors extracted to ten and then six in order to find the most stable factor structure. While the ten-factor solution yielded four factors with four or more variables with loadings greater than or equal to .40, the same criterion was met by five of the six factors generated by the six-factor solution. When coefficient alpha was computed, however, only four of the original ten factors had an alpha greater than or equal to .55, including one three-item factor. A total of twenty determinants were included in these four factors. On the other hand, only three of the six factors incorporating 18 determinants had alpha greater than or equal to .55, again including the same three-item factor. At this point, the four

factors generated by the ten-factor solution seemed most promising. Table 14 shows a comparison of the largest six factors in the rotated factor patterns generated by these two analyses.

Each response was assigned from one to four of 61 possible content categories. In addition to the four basic categories of human content--Whole Human (H), Human detail (Hd), Distanciated human ((H)), and Distanciated human detail ((Hd)), plus categories of Anatomy, bony (An-b), Anatomy, visceral (An-v), Blood (Bl), Cloud (Cl), Clothing (Cg), Explosion (Ex), Food (Fd), Fire (Fi), Smoke (Sm), X-ray (Xr) and Sex (Sx), all clearly defined in Exner (1972)--there were 240 varieties of animal contents plus 257 idiosyncratic contents that were categorized for this study. Because "Monster" was mentioned specifically with considerable frequency, ($N = 129$) it was assigned a separate category of its own, rather than included with either (H) or (A) as it usually is. When two independent examiners assigned 20 categories to the animal contents, a kappa coefficient of .94 was achieved ($p < .001$), indicating agreement beyond chance. Similarly, a kappa coefficient of .90 ($p < .001$) was achieved in confirmation of 25 additional categories developed to encompass the unique responses made by this group. The original 61 content categories and their frequencies can be found in Appendix P. Of these, five had frequencies of less than eight and were excluded from further

Table 14

Component Items, Varimax Rotated Factor Loadings and Mean Factor Scores for Determinants Comparing 10- and 6-Factor Solutions

10 Factor Solution			6 Factor Solution		
Determinant		Loading	Determinant		Loading
I.			I.		
C'Fb		.72	M^b		.68
M^b		.70	FM^b		.62
M^a		.37	C'Fb		.58
C'Fv		.52	CFneg		.55
M^p		.66	C'Fv		.50
M^a/p		.48	M^a		.42
Variance explained		4.27	m^b		.68
Coefficient alpha		.56	$m^{a/b}$		.42
$\bar{X}$ factor score	2.25		M^a		.40
SD	2.37		ThF		.42
II.			Variance explained		4.37
$FM^{p/b}$		.71	Coefficient alpha		.69
TF		.66	$\bar{X}$ factor score	4.05	
Fr		.80	SD	4.04	
FD		.52	II.		
m^b		.51	TF		.68
FC'g		.66	FD		.66
Variance explained		2.63	$FM^{p/b}$		.57
Coefficient alpha		.59	Fr		.54
$\bar{X}$ factor score	1.54		FC'g		.51
SD	2.36		Variance explained		2.63
III.			Coefficient alpha		.68
m^b		.72	$\bar{X}$ factor score	0.82	
FM^b		.71	SD	1.64	
CF		.54	III.		
ThF		.66	FC'a		.79
CFneg		.61	FC'b/a		.73
Variance explained		2.28	CF		.53
Coefficient alpha		.56	Variance explained		2.00
$\bar{X}$ factor score	1.81		Coefficient alpha		.56
SD	2.16		$\bar{X}$ factor score	0.10	
			SD	0.80	
IV.			IV.		
FC'a		.80	FCpoo		.64
FC'b/a		.79	F		.52
CF		.42	FCneg		.43
Variance explained		1.97	FT		.44
Coefficient alpha		.61	FY		.43
$\bar{X}$ factor score	0.10		Variance explained		1.87
SD	0.80		Coefficient alpha		.17
V.			$\bar{X}$ factor score	10.26	
$M^{p/b}$		.64	SD	3.87	
$M^{a/p}$		.58	V.		
FT		.48	$M^{a/p}$		.64
FD		.42	FMa		.37
Variance explained		1.81	$M^{p/b}$		.54
Coefficient alpha		.38	M^p		.42
$\bar{X}$ factor score	0.89		Variance explained		1.81
SD	1.75		Coefficient alpha		.38
VI.			$\bar{X}$ factor score	1.17	
FCpoo		.69	SD	1.38	
F		.58	VI.		
FCneg		.60	Cpoo		.69
Variance explained		1.66	C'b		.62
Coefficient alpha		.13	FC'b		.46
$\bar{X}$ factor score	0.66		m^p		.43
SD	3.42		Variance explained		1.66
			Coefficient alpha		0.00
			$\bar{X}$ factor score	0.68	
			SD	1.17	

analyses. They were: General Sea Animal (N = 5), Non-food consumptive (such as cigarette or bottle of liquor, N = 3), A/H (animal and human in combination as one, such as hawkman or frogman, N = 2), X-ray (N = 5), and Sex (N = 6).

The remaining 56 content categories with frequencies of greater than or equal to eight were then subjected to a series of principal-component factor analyses in order to achieve psychologically and statistically meaningful groupings. With a minimum eigenvalue of one used as a criterion, 22 factors were extracted initially and rotated by Kaiser's varimax method. Analyses were repeated limiting number of factors to 15 and then ten to determine most stable factor structure. An eigenvalue of two was used next as criterion for inclusion, and factors with four or more items loading at or greater than .40 were examined. Six factors from each analysis met these criteria, and those from the ten-factor solution were tested for internal consistency because they incorporated the largest number of contents, 30 of the 56. Coefficient alpha, however was greater than .55 for only two of the six factors. Factor I included Fire, Smoke, Transportation and Futuristic or modern phenomena. The mean for this factor was 1.02, and coefficient alpha was .76. Factor IV, which comprised significant loadings for Human detail, Birds, Domestic and farm animals, Animal detail, Clothing and Recreation, music and leisure, had an alpha coefficient of .59 and a mean of 4.02. Composition,

loadings, means, and coefficient alpha for each of the six factors considered here can be found in Table 15.

The inclusion of only ten of 61 contents in further analyses seemed inadequate, and another approach was sought. As the factor structure of the original and 15-factor solutions did not appear significantly different from what had already been examined for contents, the 40 determinants and 56 content categories with frequencies of greater than or equal to eight were entered together into a single principal-component factor analysis. The 13 factors generated using a minimum eigenvalue of two were examined both for psychological and statistical integrity, with the hope of incorporating a more meaningful sampling of both contents and determinants. To establish strength and stability of these factors, the analysis was repeated limiting number of factors extracted to ten and alpha coefficients were computed. While several more contents and determinants were included in the ten-factor solution, here the first seven factors created using the mineigen-2 criteria all had alpha coefficients of greater than .60 and allowed for greater interpretability. A total of 21 contents and 21 determinants were incorporated into these seven factors. They were both psychologically meaningful and statistically sound and were therefore chosen as the content-determinant units to be used in future analyses. Tables 16 and 17 show the composition of the 13 factors considered, their means for this

Table 15

Component Items, Varimax Rotated Factor Loadings and Mean Factor Scores for Content Factors

Content		Loading
I.		
Smoke		.78
Transportation		.78
Modern Phenomena		.71
Fire		.58
Eigenvalue		4.53
Coefficient alpha		.76
$\bar{X}$ factor score	1.02	
SD	1.81	
II.		
Abstractions		.80
Whole Human		.70
Fish		.60
Blood		.40
Eigenvalue		2.90
Coefficient alpha		.42
$\bar{X}$ factor score	2.40	
SD	2.76	
III.		
Sea Animal		.60
Primate		.54
Insect		.50
Domestic/Farm Animal		.48
Animal Detail		.46
Land Form		.41
Eigenvalue		2.54
Coefficient alpha		.48
$\bar{X}$ factor score	6.19	
SD	4.60	
IV.		
Human Detail		.53
Animal detail		.53
Clothing		.51
Domestic/Farm Animal		.51
Recreation, music, leisure		.48
Bird		.42
Eigenvalue		2.32
Coefficient alpha		.59
$\bar{X}$ factor score	4.02	
SD	3.70	
V.		
Plants		.58
Natural Phenomena		.54
Water		.53
Celestial bodies		.46
Blood		.42
Anatomy, bony		-.41
Eigenvalue		2.17
Coefficient alpha		.36
$\bar{X}$ factor score	2.23	
SD	2.22	
VI.		
Distanciated Animal detail		.64
Creature		.49
Cartoon		.40
Shellfish		.40
Eigenvalue		2.03
Coefficient alpha		.27
$\bar{X}$ factor score	0.90	
SD	1.18	

Table 16

Component Items, Varimax Rotated Factor Loadings and

Mean Factor Scores for Content-Determinant Factors I-VI

Item	Loading	Item	Loading
I.		IV.	
Abstraction	.84	FM^{b} Animal movement, blocked	.72
Whole Human	.70	Visceral anatomy	.64
M^{b}Human movement, blocked	.68	m^{b} Inanimate movement blocked	.59
C'Fb Black color, form secondary	.68	Blood	.55
Fish	.64	C'Fnag Negative color, form secondar	.48
M^{a} Human movement, active	.54	Light	.41
M^{a}/PHuman movement, active/passive	.49	Eigenvalue	3.42
Eigenvalue	8.17	Coefficient alpha	.69
Coefficient alpha	.65	$\bar{X}$ factor score 2.25	
$\bar{X}$ factor score 3.69		SD 2.75	
SD 4.44			
		V.	
II.		Transportation	.78
F Pure form	.78	Smoke	.71
Animal detail	.71	Fire	.67
Domestic/farm animal	.60	m^{a} Inanimate movement, active	.59
Insect	.49	Modern Phenomena	.58
FMP Animal movement, passive	.45	Explosion	.40
Eigenvalue	4.37	Eigenvalue	3.16
Coefficient alpha	.61	Coefficient alpha	.78
$\bar{X}$ factor score 14.84		$\bar{X}$ factor score 1.98	
SD 8.64		SD 2.88	
III.		VI.	
Land form	.66	Distanciated animal detail	.71
Fr Reflections, form dominant	.62	FC'w White color, form dominant	.69
YF Diffuse shading, form secondary	.60	FC'b/w Black/white, form dominant	.65
FMP/b Animal movement, passive/		Creature	.50
blocked	.56	Prehistoric animal	.42
FD Form dimensionality	.54	CF color projection	.40
Natural Phenomena	.53	Eigenvalue	2.97
Plant	.41	Coefficient alpha	.67
FC'g Form dominated gray	.43	$\bar{X}$ factor score 0.69	
m^{a} Inanimate movement, active	.40	SD 1.43	
Eigenvalue	4 02		
Coefficient alpha	.56		
$\bar{X}$ factor score 3.45			
SD 3.39			

Table 17

Component Items, Varimax Rotated Factor Loadings and Mean Factor Scores for Content-Determinant Factors VII-XIII

Item		Loading
VII.		
Cpos - Pure color, positive		.78
Colors, Ink, Paint		.75
C'b - Black, no form		.70
Eigenvalue		2.57
Coefficient alpha		.68
$\bar{X}$ factor score	0.06	
SD	1.19	
VIII.		
Cneg - Pure color, negative		.61
Weapons		.51
Human group		.50
Prehistoric animal		.47
Eigenvalue		2.52
Coefficient alpha		.44
$\bar{X}$ factor score	0.61	
SD	1.00	
IX.		
Food		.60
$FM^{a/b}$ Animal movement, active/ blocked		.55
$M^{a/b}$ Human movement, active blocked		.42
Eigenvalue		2.39
Coefficient alpha		.46
$\bar{X}$ factor score	0.53	
SD	1.05	
X.		
Rodent		.65
$FM^{a/p}$ Animal movement, active, passive		.43
Shellfish		.40
Eigenvalue		2.31
Coefficient alpha		.40
$\bar{X}$ factor score	1.95	
SD	1.63	
XI.		
(H) Monster, nonanimal		.59
(Hd) Distanciated human detail		.58
MP Human movement, passive		.50
$MP^{/b}$ Human movement, passive/blocked		.43
Eigenvalue		2.26
Coefficient alpha		.46
$\bar{X}$ factor score	1.17	
SD	2.07	
XII.		
Furniture, household		.59
Objects of worship		.53
(A) Distanciated animal		.45
Eigenvalue		2.20
Coefficient alpha		.41
$\bar{X}$ factor score	0.48	
SD	0.88	
XIII.		
Land forms		.41
Animal, unspecified		.40
Anatomy, bony		.40
Eigenvalue		2.05
Coefficient alpha		.28
$\bar{X}$ factor score	1.25	
SD	1.59	

group, and alpha coefficients.

The next step in the analyses was to subject the 30 Rorschach variables to two principal-component factor analyses, one limiting number of rotated factors to ten and one to six factors. When number of items, alpha coefficients, and psychological integrity were all considered, the first three factors generated by the ten-factor solution were chosen as the best factors. All factors had at least four items, alpha coefficients of greater than or equal to .70, and they represented meaningful integration of 19 of the 30 pieces of Rorschach data examined. Factor composition and alpha coefficients generated by both solutions can be found in Table 18.

Finally, the three Rorschach factors and seven content-determinant factors were factor analyzed in order to incorporate all Rorschach data into several meaningful and reliable units. Only three factors emerged with eigenvalues of greater than one. They are described in Table 19.

Reliability of Rorschach factors. Before computation of canonical correlations between Rorschach factors and BSAG factors was undertaken, 53 cases were randomly selected to test the reliability of the three Rorschach factors and seven content-determinant factors. A clinician experienced in administration of the Rorschach and familiar with all of the scoring categories used in this study (including blocked

Table 18

Component Items, Varimax Extracted Factor Loadings and Mean

Factor Scores for Rorschach Data Factors Derived from 10- and 6-Factor Solutions

10-Factor Solution			6-Factor Solution		
Item		Loading	Item		Loading
I. General Responses			I.		
FQo, Adequate form quality		.93	D, Common detail		.92
D,Common detail		.92	FQo, Adequate form quality		.91
Pairs		.89	Pairs		.88
DQo, Consistent quality		.86	DQo, Consistent quality		.85
R, Total number responses		.84	R, Total number responses		.82
Position ∧		.77	Position ∧		.75
Popular		.59	Popular		.68
Dd, Unusual detail		.51	Dd, Unusual detail		.47
DQ+, Integrated quality		.46	DQ+, Integrated quality		.47
Near-Popular		.42	Near Popular		.40
FQv, Poor form quality		.40	Eigenvalue		7.47
Position ○		.40	Coefficient alpha		.91
Eigenvalue		7.47	$\bar{X}$ factor score	77.09	
Coefficient alpha		.90	SD	38.66	
$\bar{X}$ factor score	79.62		II.		
SD	39.83		FQ, Poor form quality		.93
II. Maladaptive Responses			DQ, Disregard of blot qualities		.92
FQ-, Poor form quality		.96	Special Scores		.66
DQ-, Disregard of blot qualities		.95	Dd, Unusual detail		.32
Special Scores		.68	Dds, Unusual space detail		.30
Dd, Unusual detail		.42	R, Total number responses		.42
Eigenvalue		2.99	Eigenvalue		2.99
Coefficient alpha		.81	Coefficient alpha		.73
$\bar{X}$ factor score	11.26		$\bar{X}$ factor score	29.42	
SD	9.42		SD	15.86	
III. Integrated Responses			III.		
Zf, Frequency of synthesis		.86	FQ+, Well articulated form		.75
W, Whole blot		.84	Zf, Frequency of synthesis		.64
DQ+, Integrated quality		.68	Ds, Common detail with space		.63
Rejection		-.42	DQ+, Integrated quality		.60
Eigenvalue		2.71	Ws, Whole blot with space		.50
Coefficient alpha		.70	Eigenvalue		2.71
$\bar{X}$ factor score	18.85		Coefficient alpha		.67
SD	8.88		$\bar{X}$ factor score	13.73	
IV.			SD	7.68	
DQv, Vague quality		.72	IV.		
FQ0, No form		.71	W-Whole blot		.88
FQv, Weak form quality		.55	Zf, Frequency of synthesis		.67
Eigenvalue		1.88	Zd, Difference score		.48
Coefficient alpha		.47	Initial response time		-.48
$\bar{X}$ factor score	4.18		Eigenvalue		1.88
SD	3.42		Coefficient alpha		.14
V.			$\bar{X}$ factor score	35.32	
FQ+, Articulated form		.88	SD	38.38	
Ds, Common space detail		.79	V.		
DQ+, Integrated quality		.48	DQv, Vague quality		.72
Eigenvalue		1.76	FQ0, No form		.66
Coefficient alpha		.31	FQv, Questionable form		.52
$\bar{X}$ factor score	3.96		Eigenvalue		1.76
SD	4.83		Coefficient alpha		.47
			$\bar{X}$ factor score	4.18	
			SD	3.42	
			VI.		
			Position ∧ ○		.72
			Position < >		.72
			Position ∧		-.48
			Position ∨		.42
			Eigenvalue		1.43
			Coefficient alpha		-.12
			$\bar{X}$ factor score	8.18	
			SD	8.39	

Table 19

Component Items, and Mean Factor Scores for Varimax Rotated Factor Loadings for Rorschach Data, Contents and Determinance

Item		Loading	Item		Loading
I.			II.		
Rfac 3		.84	CBfac 2		.95
-Hxj			Insect		
V			Dem/farm		
DQ+			Ad		
2f			FHP		
CBfac 3		.80	F		
Plant			Rfac 1		.85
Land form			R		
Natural phenomena			@A		
FHP/D			O		
m^a			D		
FC'g			Dd		
TF			DQ+		
Fr			DQo		
FD			FQo		
CBfac 5		.72	FQv		
Explosion			Pairs		
Fire			Pop		
Smoke			(Pop)		
Transportation			Rfac 2		.66
Modern futuristic			Dd		
m^a			DQ-		
CBfac 1		.66	FQ-		
H			Spec		
Ab			Eigenvalue		1.61
Fish			Coefficient alpha		.92
H^a			Factor Mean	105.72	
H^b			SD	51.89	
H^{ab}			III.		
C'Fb			CBfac 4		.90
m^a			Anatomy, visceral		
CBfac 6		.66	Blood		
Creature			Light		
Prehistoric Animal			FM^b		
(Ad)			m^b		
CF			CFneg		
FC'w			Rfac 3		.76
FC'wv			Dd		
Eigenvalue		3.33	DQ-		
Coefficient alpha		.81	FQ-		
Factor mean	29.01		Spec		
SD	15.63		Cw fac 1		.68
			H		
			Ab		
			Fish		
			H^a		
			H^b		
			H^{ab}		
			C'Fb		
			Eigenvalue		1.15
			Coefficient alpha		.80
			Factor mean	17.20	
			SD	13.27	

movements, positive and negative color, and separation of shadings into specific scores for blacks, whites and grays) was trained briefly in the composition of these factors. Factor scores generated by the examiner and those rendered independently by the other clinician were subjected to product-moment correlations and then to t tests comparing means. All factors were significantly correlated ($p < .001$), and none had significantly different means. Table 20 contains mean scores for each factor, standard deviations, t test values, and correlation coefficients. Data were considered reliably scored, and analyses were continued.

Canonical Correlations. Factor scores for the five BSAG factors and three Rorschach factors incorporating contents and determinants were first converted to standardized Z scores, using the Condescriptive program of SPSS^{x} (SPSS, Inc., 1983). With the Rorschach scores entered first and BSAG scores entered next, canonical correlation was accomplished using the SPSS^{x} (1983) MANOVA procedure to determine the source and degree of common variance in these two sets of variables. No significant correlations were found, with only 2.9% of Rorschach variance predictable from the BSAG, and 0.11% of BSAG variance accounted for by the Rorschach (redundancy) (Weiss, 1972). Canonical correlation was repeated using standard scores from a total of nine Rorschach variables, the six factors based on contents and

Table 20

Means, t values and Correlation Coefficients for Rorschach Reliability Data

Variable	Examiner		Clinician			
	Mean	SD	Mean	SD	t	r
Rorschach Factor I	76.91	36.08	77.17	36.07	1.74	1.00*
Rorschach Factor II	12.11	10.03	12.08	10.03	0.35	0.99*
Rorschach Factor III	19.45	11.65	19.47	11.70	-0.19	0.99*
Cont/Det. Factor I	3.70	3.83	3.55	3.59	1.11	0.97*
Cont/Det. Factor II	14.98	7.99	14.77	8.06	1.40	0.99*
Cont/Det. Factor III	3.30	2.95	3.11	2.89	1.46	0.95*
Cont/Det. Factor IV	1.72	2.72	1.74	2.68	-1.00	0.98*
Cont/Det. Factor V	1.72	3.19	1.75	3.35	-0.63	0.99*
Cont/Det. Factor VI	0.75	1.64	0.75	1.53	0.00	0.93*
Cont/Det. Factor VII	0.34	0.85	0.36	0.92	-0.57	0.97*

*$p < .001$

Note: $N=53$, df for t test is $N-1 = 52$; for r_{12} is $N-2 = 51$

determinants combined, plus the three Rorschach factors incorporating the remaining data, and also the five BSAG factors. Again, the relationship was not significant, with redundancy coefficients of 3.17 and 3.65 generated for the Rorschach and BSAG respectively. When a 10th Rorschach variable was added to the analyses (the three-item factor combining contents and determinants), there were no appreciable changes. With five nonsignificant canonical variates generated, the BSAG accounted for 3.15% of Rorschach variance, and 4.09% of BSAG variance could be predicted by the Rorschach. Tables 21, 22, and 23 contain the canonical correlates generated by these analyses, along with Wilks values, significance levels, and cumulative redundancies for the Rorschach and BSAG variables. As no significant results were found, the sample was not divided 2/3 and 1/3 to provide cross-validation.

However, several relationships appeared between BSAG and Rorschach factors that approached statistical significance (regression analyses for within-cells error using each of the Rorschach variables entered (three, nine or ten) and the five BSAG factors, yielded T-values significant at $p < .10$). A series of bivariate correlations was computed next to explore these relationships further.

Product-moment correlations. A total of 65 variables were entered into a single correlation matrix. Because the BSAG

Table 21

Canonical Correlations, Wilks Values and Redundancies for Five BSAG Factors and Three All Inclusive Rorschach Factors and Five BSAG Factors

		Wilks				Redundancy	
Root	Canonical Correlation	Value	Approx. F.	DF	Sig.	Rorschach Variance explained by BSAG	BSAG Variance explained by Rorschach
		.912	.960	15	.50ns		
1	.23						
2	.17						
3	.09						
						0.98	2.90

Table 22

Canonical Correlations, Wilks Values and Redundancies for Five BSAG Factors and Three Rorschach Plus Six Content-Determinant Factors

		Wilks				Redundancy	
Root	Canonical Correlation	Value	Approx. F	DF	Sig.	Rorschach Variance explained by BSAG	BSAG Variance explained by Rorschach
		.72	1.13	45	26ns		
1	.39						
2	.26						
3	.22						
4	.17						
5	.12					3.65	3.17

Table 23

Canonical Correlations, Wilks Values and Redundancies for Five BSAG Factors and Three Rorschach Factors plus Seven Content-Determinant Factors

		Wilks				Redundancy	
Root	Canonical Correlation	Value	Approx. F	DF	Sig.	Rorschach Variance explained by BSAG	BSAG Variance explained by Rorscha
		.69	1.13	50	25ns		
1	.40						
2	.30						
3	.22						
4	.19						
5	.12					3.15	4.10

factors generated by this sample were statistically sound, psychologically meaningful, and sufficiently similar to well validated factors extracted from the standardization sample (McDermott, 1980), BSAG data were included only in factor form. To examine all possible relationships with Rorschach variables, on the other hand, data were included in several forms. Content and determinant scores were included as the seven content-determinant factors described above. This seemed both parsimonious and statistically sound. The remaining 30 pieces of Rorschach data were each entered separately, as well as in factor form. Both of the three overall Rorschach factors and the three factors excluding contents and determinants were entered here, as they were used in the canonical correlations. Finally, 17 descriptive and morbidity variables were added. These included: age, sex, length of stay, medication (dichotomy reflecting presence or absence), history of firesetting (dichotomy), reading normal curve equivalent score (NCE), language NCE, arithmetic NCE, science NCE, social studies NCE (all from the March, 1982 administration of the CTBS), and IQ classification, plus six pieces of descriptive information included on the BSAG. These were general health, speech characteristics, size, physical appearance, reading achievement rating and arithmetic achievement rating.

Computing bivariate correlations among all of the 65 variables resulted in 2,145 separate analyses. Critical values

of alpha of less than or equal to .05 or .01 could not be applied here due to the large number of analyses. At least 100 relationships significant at a reported alpha level of .05 would have resulted by chance alone. By dividing this significance level by number of variables, a value of alpha of less than or equal to .0008 was set as a new critical value (the Bonferroni principle). The only correlations approaching significance that emerged were between the BSAG factors themselves, among Rorschach variables themselves, and among standardized NCE scores and IQ classification. Physical appearance, reading achievement and math achievement as rated on the BSAG also had significant correlations with the CTBS scores and IQ classification by this criteria. Even when a true alpha level of .001 was used, no relationships were found except those mentioned above among similar types of variables. Correlation coefficients and significance levels can be found in Appendices Q, R, S, T, and U.

Discriminant Analyses. Finally, in keeping with the special education focus of this project, two series of discriminant function analyses (DISCRIM) (SPSS, 1983) were undertaken comparing the ability of Rorschach factors and BSAG factors to correctly group students, first based on special education classification and then on psychiatric diagnosis. Hit rates were corrected for chance. Number of predicted members for each group was divided by total number of grouped

subjects, squared, and summed across all groups, yielding proportion of group membership determined by chance alone. This was converted to a percent, subtracted from the hit rate and divided by 100% minus the percent of chance determination of correct group membership. The final figure was considered hit rate beyond chance.

While all five BSAG factors were submitted to each analysis, Rorschach variables were entered in several forms: seven content-determinant factors plus three Rorschach factors, six content-determinant factors alone, three Rorschach factors alone, and three global Rorschach factors encompassing contents, determinants as well as Rorschach variables. The two special education classifications were socially and emotionally disturbed (SED) and brain damaged (BD), and the three categories psychiatric diagnosis used were conduct disorder and disorders of impulse control (DSM-III code 312), anxiety and other disorders of infancy, childhood, or adolescence (DSM-III code 313), and attention deficit disorder (DSM-III code 314). Comparative hit rates, corrected for chance, for special education categories can be found in Table 24. The BSAG, total Rorschach factors and Rorschach data factors (excluding contents and determinants) were similarly able to correctly group 53% of students, corrected for chance. On the other hand, as shown win Table 25, it was contents and determinants that were best able to correctly classify students by

diagnostic category, with a corrected hit rate of 45% compared to 38% for the BSAG.

Table 24

Classification of Hits and Misses for Special Education Categories

by BRAG Factors and Various Combinations of Rorschach Factors

	Predicted Group											
	BRAG			Total Rorschach Factors			Content/Determinant Factors			Rorschach Data Factors			Rorschach Data Plus Content/Determinant Factor		
ACTUAL GROUP	SED	ED	TOTAL	SED	ED	TOTAL	SED	ED	TOTAL	SED	ED	TOTAL	SED	ED	TOTAL
SED	45(56%)	36(44%)	81	39(47%)	44(53%)	83	43(52%)	40(48%)	83	41(49%)	42(51%)	83	41(49%)	42(51%)	83
ED	21(44%)	48(70%)	69	14(19%)	58(81%)	72	25(35%)	47(65%)	72	16(22%)	56(78%)	72	23(32%)	49(68%)	72
Ungrouped	4(57%)	3(43%)	7	2(29%)	5(71%)	7	4(57%)	3(43%)	7	2(29%)	5(71%)	7	3(43%)	4(57%)	7
Total	70	87	157	55	107	162	72	90	162	59	103	162	67	95	162
Hit rate for grouped students	62%			63%			58%			63%			58%		
Hit rate beyond chance	53%			53%			50%			53%			49%		

Table 25

Classification Hits and Misses for Diagnostic Categories

by DSAC Factors and Various Combinations of Rorschach Factors

	Predicted Group																			
	Five DSAC Factors				Three Total Rorschach Factors				Six Content/ Determinant Factors				Three Rorschach Data Factors				Three Rorschach Data Plus Seven Content Determinant Factors			
Actual Group	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
1	32(52%)	15(24%)	15(24%)	62	30(46%)	30(46%)	5(8%)	65	41(63%)	13(20%)	11(17%)	65	17(26%)	26(40%)	22(34%)	65	37(57%)	16(25%)	12(19%)	65
2	7(47%)	4(27%)	4(27%)	15	3(20%)	11(73%)	1(7%)	15	6(40%)	3(33%)	4(27%)	15	4(27%)	7(47%)	4(27%)	15	5(33%)	8(53%)	2(13%)	15
3	2(22%)	3(33%)	4(44%)	9	3(33%)	4(44%)	2(22%)	9	3(33%)	1(11%)	5(56%)	9	2(22%)	3(33%)	4(44%)	9	3(33%)	3(22%)	4(44%)	9
Grouped Cases	41	22	23	86	36	45	8	89	50	19	20	89	23	36	30	89	45	26	18	89
Ungrouped	36(51%)	20(28%)	15(21%)	71	32(44%)	30(41%)	11(15%)	73	29(40%)	22(30%)	22(30%)	73	18(25%)	33(45%)	22(30%)	73	31(42%)	32(44%)	20(27%)	73
Total	77	42	38	157	68	75	19	162	79	41	42	162	41	69	52	162	66	58	38	162
Hit rate for grouped cases		44%				48%				57%				31%				55%		
Hit rate corrected for chance		36%				41%				45%				28%				45%		

Note: Group 1 refers to DSM-III code 312, Disorders of impulse control, Group 2 to DSM-III code 313, Anxiety and other disorders of infancy, childhood and adolescence, and Group 3 to DSM-III code 314, Attention deficit disorder.

CHAPTER V

Discussion

In this study an effort was made to reciprocally validate two instruments frequently used to evaluate children. It was hoped that common ground could be identified between the two which would enhance the utility of each. In fact, this was not so; the motivating hypothesis of this research was not supported. A significant portion of variance common to both the Rorschach and the Bristol Social Adjustment Guides (BSAG) was not found, either via multivariate statistical analyses or through the analysis of zero-order correlations. However, while the final canonical correlations yielded null results, factor analyses of both the BSAG and the Rorschach produced meaningful information, as did the multiple-discriminant analyses. Therefore, the implications of these more positive results will be discussed following a presentation of several hypotheses and explanations concerning the overall nonsignificant findings. Finally, limitations of this exploratory study will be presented and suggestions made for further research.

Overall Findings

The only research hypotheses supported by this study were numbers (1), (2), and (5): (1) Dimensions with factorial

integrity were extracted and identified for the Rorschach, but their statistical unity was often greater that their psychological interpretability. In particular, the most meaningful breakdown of information collected via the Rorschach in this study came by factor analyzing contents and determinants together and the remaining Rorschach data separately. When these data were combined in a single factor analysis, the resulting three factors proved difficult to interpret psychologically and did not contribute significantly to prediction of special education or psychiatric diagnostic category. (2) The BSAG factor structure generated entirely from this sample of students in a special education facility was indeed different from that derived from the BSAG standardization group. This supports the use of not only local norms but perhaps even school-specific factors, should the findings of this study be corroborated in replication. (5) Certain contents, determinants, and other Rorschach scores occurred with sufficient infrequency to warrant their exclusion from further anaylses, as did seven BSAG items. The criteria chosen here was 5% of the sample, or a frequency of 8. In fact, this proved to be a conservative criterion statistically due to the number of items analyzed, particularly in the case of the Rorschach where, with a total of 2733 responses, a frequency of eight represented only .2% of possible occurrences. While these low frequencies could have held

meaningful psychological interpretability, it was felt that the nature of the study warranted statistical integrity first. In addition, many Rorschach and BSAG variables were excluded from canonical correlational analyses because they failed to load significantly on the factors derived. While several pieces of Rorschach data were found to be somewhat correlated with others, these relationships were spurious at best. The impact of these individual items can certainly be explored at a later date.

No significant canonical variates were found between factors derived from the BSAG, a behaviorally-based classroom observation scale, and the Rorschach, and as a result, psychologically meaningful profiles representing empirical combinations of Rorschach and classroom behaviors cannot be described. Interpretations have been limited to what was understood about each of these instruments at the inception of this study. Neither behavioral anchors for Rorschach data, nor personality descriptions to enhance understanding of behaviors expressed in a classroom setting have been provided, as no empirical support was found for research hypotheses (3) or (4).

A review of the assumptions tested concerning the use and interpretation of the BSAG and Rorschach in combination suggests that BSAG Factors I, II, and V (Hostile-socially aggressive, Impulsive-disruptive, and Moody) are representative of types of Overreaction (OR), while BSAG Factors III and IV

(Passive-detached and Withdrawn-lethargic) are considered representatives of underreaction (UR). (a) Several qualitative Rorschach scores were significant members of Rorschach factors. DQ+ and DQo were members of the General response factor, Special scores loaded significantly on the Maladjusted response factor, and Zf (but not ZD) was a member of the Integrated response factor. CFneg, FM^b and m^b were integral parts of Content-determinant Factor IV with blood, light and visceral anatomy, while $C'F_b$ with M^a, M^b and $M^{a/p}$ were members of Content-determinant Factor I, with Humans, Abstractions and Fish as contents. FM^p, with F, Insects, Domestic and farm animals, and Animal details, were significant members of Content-determinant Factor II. FC'_g, m^a, $FM^{p/b}$ with YF, Fr, FD, Plants, Land forms and Natural Phenomena were members of Content-determinant Factor III, and m^a with Explosions, Fire, Smoke, Transportation, and Modern-futuristic phenomena, were members of Content-determinant Factor V. FC'_w, $FC'_{b/w}$ and CP, with Creatures, Prehistoric animals and Distanciated animal details, loaded on Content-determinant Factor VI, and Cpos, C'_b and Colors, ink and paint were members of Content-determinant Factor VII. None, however, were influential in relating Rorschach data to BSAG factors. (b) UR as defined in this study was not found to associate with longer response times, fewer responses, fewer whole card locations, and more common detail locations. (c) There were no

significant correlations between OR on the BSAG and higher developmental quality scores (+ and o) or Zf. Not only was there no tendency for students described as hostile, aggressive, impulsive distractible, and/or moody to offer more integrated responses; all of these relationships were negative, indicating that the opposite might more likely be true. (d) Pairs, reflections, space responses, and white color did not appear significantly more often among variations of OR. In fact, while space responses were not part of any of the Rorschach factor structures derived here, reflections were more highly correlated with form-dominated gray color than with white. White color emerged on a factor independent of the other variables described here. Rejections, on the other hand, did show a trend toward relating with moody behaviors in the classroom. (e) Passive, blocked, or combined human movement, active animal movement, gray and black color, texture, and diffuse shading responses with secondary form plus pure form responses were not found to be more highly correlated with types of UR here. In fact, Withdrawal showed a tendency to be negatively correlated with the Content-determinant factor containing blocked and inanimate movement, but with none of the other pieces of Rorschach data mentioned here. (f) Vista shading occurred with very low frequency in this sample and thus could not be correlated with types of OR. However, OR was also not related to the Rorschach Content-determinant factor

containing blocked animal and inanimate movement as well as negative color. (g) Finally, while frequency data suggest that, in this sample, the frequency of cold-blooded animals (insects, amphibians, fish) exceeded that of warm-blooded mammals in a ratio of approximately two to one, factors containing these types of animals held no significant correlations with BSAG factors reflecting types of OR. Data do support the notion, however, that some different kinds of animals are related to different clusters of variables. Both Hd and Ad responses occurred on the average of less than one time each per record, and thus they could not exceed frequencies of whole humans plus whole animals for either OR or UR as was hypothesized.

Multiple-discriminant analyses revealed that both BSAG and Rorschach factors were equally capable of predicting special education classifications, and that Content-determinant factors were more influential in accurately identifying psychiatric diagnoses. However, considering that Rorschach data, either singularly or in combination with some behavioral information, may have been influential in the formulation both special education classification and psychiatric diagnosis, the significance of these findings is clouded and the import negligible. Furthermore, while a 45% hit rate is clearly inadequate for professional applications, the relative impact of factors including contents and determinants is noteworthy.

Thus, while Exner has noted that configurations of contents can enhance our understanding of other Rorschach data (1972, p. 304), these findings suggest they may have even broader applicability when examined together with certain Rorschach determinants.

In sum, then, predictions were made as to types of behaviors to be associated with specific Rorschach variables, based on commonly accepted interpretations (Beck, 1961; Exner, 1974, 1978, 1982; Rorschach, 1949; Piotrowski, 1974). While no significant relationships emerged using multivariate statistical techniques, examination of zero-order correlations revealed some trends discussed above. Interpretability of these trends, however, was not enhanced due to the absence of multivariate or univariate correlations with phenomenologically-derived behavioral factors. Even the impact of multiple-discriminant analysis results was confounded by the possible inclusion of dependent variables in the actual derivation of the categories used.

BSAG Factors

As was expected, the factor structure for this sample, comprising totally students previously identified as maladjusted, differed from that derived from the normative population. This result is consistent with McDermott's (1981, 1984) work comparing BSAG factor structures of boys vs. girls and latency age vs. adolescents. The five factors describing

classroom behavior generated specifically from this sample--Hostile-socially aggressive, Impulsive-disruptive, Passive-detached, Withdrawn-lethargic, and Moody--include items from Stott's (1972) five core syndromes and three associated groupings, as well as three items from his Neurological scale.

The subjects scored highest on Factor II, Impulsive-disruptive, with a mean score of 5.2, and it contained the fewest number of students receiving a factor score of zero (32, or 20%); most students in this sample exhibited some of this behavior. Similarly, Factor IV, Withdrawn-lethargic, had the lowest mean score, 1.7 and the highest percentage of students receiving a factor score of zero (41%, or 66 students). Overall, most students received scores on more than one factor, and most could be described as exhibiting behaviors characterized as both overreactive and underreactive. All of these findings corroborate prior research indicating that underreactive behaviors occur less frequently in a predominantly male sample and that maladaptive behaviors do not occur in isolation, are not mutually exclusive, but appear in combinations as profiles of behavior (McDermott, 1980a).

Although second-order factors were not derived, the intercorrelations among these factors suggest some trends. In keeping with prior reports of an over-active/under-active dichotomy characterizing observed behaviors, Factors I, II, and V were significantly inter-related as were Factors III and IV.

There was 53% common variance between the Impulsive-disruptive and the Hostile-aggressive factors and 23% common variance between factors reflecting impulsive and moody behaviors. With a correlation of .48, 23% of variance in the Hostile-aggressive factor can be accounted for by behaviors described as Moody behaviors. Furthermore, the Withdrawn-lethargic dimension shared 18% of its variance with Passive-detached behaviors, represented in a correlation of .42. Thus, students exhibiting impulsive, distractible, and disruptive behaviors in the classroom also are inclined to be moody and somewhat hostile and aggressive. On the other hand, students who are withdrawn and lethargic tend to exhibit behaviors described as passive and detached as well.

Bivariate correlations revealed some interesting trends, that is, exhibited relationships with significance at the .01 level. Given the number of correlations computed, some of these may be only chance occurrences. Nevertheless they are discussed here as potential relationships to be explored in greater depth at another time.

Hostile and socially aggressive classroom behaviors appear negatively related to age at this private residential facility, as do impulsive and disruptive behaviors. This is consistent with the history of this school and with changes in private special education since the implementation of P.L. 94-142. Since its passage in 1977 guaranteeing the right to a free

public education for all students regardless of handicap, the type of child referred for private special education has changed. While one might hypothesize that older students had been enrolled for a longer time, this relationship only approached a level of significance considered for discussion here. However, perhaps older students, who had been maintained in public schools longer before special education referral exhibit fewer of those behaviors most difficult for schools to handle: specifically hostile, aggressive, impulsive, and disruptive behaviors. These behaviors may be more characteristic of younger students, for whom public education more quickly becomes inadequate. Furthermore, hostile-aggressive behaviors were also negatively correlated with adequate form quality on the Rorschach and with Content-determinant Factor III; this result shows a similarity to Exner and Weiner's (1982, and Note 3) description of socially isolated and negatively introspective individuals.

On the other hand, the more impulsive behaviors characterized by BSAG Factor II did not even have appreciable zero-order correlations with Rorschach or other background variables, while the Moody factor showed some association with making Rejections on the Rorschach. Again, it may be that those individuals who are most strongly motivated by their feelings of the moment are inclined to take a negative and resistive approach to this activity, as they are inclined to do

in a classroom setting ("Speaks to teacher only when alone," for example).

BSAG Factor III, Passive-detached was negatively correlated with turning the Rorschach plate upside down and offering responses to it in that position. The assertiveness required for such an action could be beyond the scope of individuals described as sitting quietly and meekly and afraid to begin a new activity of his or her own accord. Ratings of physical appearance, where higher scores reflect deviations from "attractive," also showed trends of association with this factor. While this in no way represented a hierarchical scale, all scores greater than one reflected the presence of some noticeable physical anomaly. With the potentially spurious nature of this relationship in mind, one might wonder to what extent unattractive, sickly, or mildly disabled youngsters do tend to appear passive, detached, even withdrawn in a classroom setting, especially when surrounded with students more inclined to express impulsive, disruptive and distractible behaviors in their presence. In fact, Factor IV, including more withdrawn and lethargic behaviors ("cannot bring self to be that sociable," "distant, never wants to talk," and "remains aloof in a world of his/her own"), also showed trends of association with physical appearance, the use of medication, and the presence of speech difficulties. This factor was also negatively correlated with Content-determinant Factor IV,

including negative color with secondary form, visceral anatomy, blood, light, and blocked animal, and inanimate movement. Thus, one might surmise that a student with a high score on this Withdrawn-lethargic factor would not be likely to perceive life-destructive color or non-human kinesthetic potential on the Rorschach. Nor might he or she express responses involving blood, guts, or rays of light. Unfortunately, this study has not revealed those types of students who might perceive such phenomena.

In sum, results of this study lend support to the notion that different samples, particularly those comprising youngsters with behaviors considered deviant, are represented in different factor structures on the BSAG. The overall Overreactive and Underreactive dimensions might emerge as second-order factors, but again with variations specific to the group of students under consideration. The specificity or generalizability of the factor structure derived here must be explored via replications both with similar and different samples of students currently placed in self-contained public or private special education classrooms before truly definitive statements regarding validity can be proposed.

Rorschach Factors

In factor analyzing the many individual pieces of Rorschach data scored in this study, it was hoped that groups of variables could be linked by virtue of their common

variance. These factors, understood then as dimensions of Rorschach behavior, were to be correlated with actual classroom behaviors in an effort to phenomenologically anchor what heretofore had primarily been considered hypothetical constructs. In the more than 30 years since Rorschach's original manuscript was published (1949), types of Rorschach scores have multiplied. While Rorschach outlined 23 symbols and abbreviations relevant to his research, including locations, contents, determinants, and ratios, this study commenced with examination of 61 contents, 59 determinants, seven locations, four levels of both developmental quality and form quality, initial response time, pairs, populars (coded by specific content and plate, but not examined here), Z-scores, 19 varieties of special score plus four card positions, four types of plate rejection, three types of additions and 12 varieties of changes made by the respondent, a total of 182 different pieces of information, excluding derivation of any sums or ratios. One aim of this research, therefore, was to examine how interrelated these scores were, which scoring categories were most meaningful and discriminating and which were repetitious, failing to provide new and relevant information.

Repeated factor analyses did in fact reveal several consistent patterns of relationship among Rorschach contents, determinants, and other scoring variables. In the discussion

of relationships among the content categories used, several questions will be addressed: Does breakdown of animals by size and phylogenetic category (warm vs. cold blooded, etc.) differentially influence the factor structure described here? Are monsters indeed a separate content category, or are they more a part of distanciated humans or distanciated animals as they are presently scored? Are idiosyncratic categories derived specifically from this sample comparable to those identified by Exner and his colleagues? (1974, 1982).

Content-determinant factors. Examination of the composition of the content-determinant factors used in final correlational analyses revealed that only three of the original 12 whole animal categories with frequencies greater than or equal to eight, are significant members. Fish loaded on Content-determinant Factor I with whole humans and abstractions, while both insects and domestic/farm animals were members of Factor II, which included also animal details, passive animal movement, and pure form. None of the other animal categories appeared. The composition of four content factors with alpha coefficients of at least .40 but not used in the final analyses sheds more light on these questions. Here, birds and domestic/farm animals were significant members of a factor, along with human and animal details, clothing, and recreation and music. In addition, insects, primates, domestic/farm animals, and sea animals also fell together to

form a factor with animal details and land formations. As before, fish loaded significantly with humans and abstractions, but here also with blood. At most, then, seven separate animal contents appear sufficiently intercorrelated as to form only moderately stable factors. Whether this implies that the remaining categories (shellfish, reptiles and amphibians, large mammals, small mammals, and animals unspecified) are meaningful in an idiosyncratic way is unclear. It does appear, however, that fish, insects, animal details, and domestic/farm animals, specifically, are more meaningfully related to each other, to additional contents, and to Rorschach determinants than are other types of animals.

That fish would load significantly on a factor with whole humans and abstractions is difficult to explain. This association is consistent across several analyses, however, and the factor certainly warrants closer examination. The perception of whole human figures, particularly in some sort of kinesthetic activity, is considered "positive" in global Rorschach interpretation, reflecting a healthy and productive interest in others. Abstract responses, on the other hand, are considered reflections of intellectualization as a psychological defense, particularly in combination with contents falling into the category of art or art work as it is labeled here (Weiner, Note 3). Fish are interpreted by Phillips and Smith (1953) as representing "a reaction to

maternal overprotection," and/or "a relinquishment of strivings for independence from an overwhelmingly possessive mother figure and is associated with a profound passivity and inertia and with a clinging dependency." C', especially when black is articulated specifically and form is secondary, is considered an indication of gloomy, sad, and negative self images, an important indicator (with several other types of scores) of depression (Exner and Weiner, 1982).

The fact that active, blocked, and active/passive human movement were members of the same factor is noteworthy, and it suggests that these three types of scores may indeed reflect a similar phenomenon. Furthermore, this factor also had its highest correlations (greater than .50) with Rorschach Factor I, the general response factor, with total number of responses and integrated developmental quality in particular. It would be convenient to hypothesize that this represents at least average intelligence with perhaps a depressive tone, but without even spurious correlations with a behavioral factor reflecting lethargy, withdrawal, and/or depression, nor with intelligence classification, interpretation does not come readily. One might surmise, though, that in this sample perceptions of humans and of human movement do not necessarily warrant the usual interpretation reflecting a healthy and positive interest in others. Instead, perceptions of humans may be associated with conflicts over independent and assertive

actions, another hypothesis lacking the validity of some behavioral association.

Insects constitute the most frequently occurring animal category, both in terms of total contents and by number of subjects offering at least one response in this category. This could be because it includes the popular response to Plates I, III, and V, butterfly. Animal detail and domestic/farm animal are more highly correlated with each other than any of the other contents in the factor. Their association with passive animal movement and pure form might reflect simpler types of responses, requiring minimal cognitive exertion, and in fact the potentially significant correlation with Rorschach Factor I, the Common Response factor (r = .75, p .001), tends to support this notion. Specifically more than 25% of variance is shared with total number of responses, keeping the cards in an upright position, using common details as a location, ordinary developmental quality, adequate form quality, and identification of pairs. The association of these variables with each other and with contents such as pure Form, animal details, domestic/farm animals, and passive animal movement appears somewhat consistent with Rorschach interpretations suggesting a conventional and fairly well socialized person. This might be one inclined toward more quiet and less assertive fantasies and actions in diminished states of consciousness (i.e., under influence of alcohol or drugs) (Piotrowski, 1974,

p. 190-191) and toward the use of psychological repression (Rorschach, 1942, p. 214) as a defense. The absence of a relationship with age, sex, or any behavioral factors, however, makes specific and definitive interpretation difficult here.

Recently, Exner and his colleagues have identified a group of five content categories, all devoid of humans, which, when they occur in sum greater than 1/4 R, are believed to represent a person who is described as socially isolated (Weiner, Note 3). These categories are clouds, botany, nature, landscape, and geography. Aspects of three of these appeared on content-determinant Factor III. In this study, content category plants is identical to Exner's category of botany; land forms is comparable to Exner's landscape category, and natural phenomena (including volcanoes, geisers, and eruptions) would be a part of his category, nature. Neither clouds nor geography (called maps, specifically, here) were part of this or any other content-determinant factor.

Determinants associated with these contents were passive/blocked animal movement, active inanimate movement, form-dominated gray color, form secondary diffuse shading, form-dominated reflections, and form dimensionality. Passive/blocked movement is reflected in such kinesthetic combinations as "glides...gonna pick something up" and "laying down...been stabbed." Both giving in to gravity, and either movement potential or having been the recipient of some action

are portrayed in a single response. Where inanimate movement in general is interpreted as reflecting situational stress (Exner and Weiner, 1982), or more complex cognitive operations as in higher intelligence (Piotrowski, 1964), its association with such a combination of nonhuman activity is unclear. Similarly, C' is interpreted as involving deep-seated feelings of gloom, indicative of more chronic depression, relative to Y, diffuse shading, included among measures of more situational dissatisfaction (Weiner, Note 3). Specifically, only gray achromatic color was included here, suggesting that the general practice of examining black, white, and gray color as a singular phenomenon is not accurate, as each seems to fall into a distinctly different factor structure.

Form-dominated reflections in reasonable amounts (see Exner's 1982 norms) are believed to imply a healthy degree of self interest or narcissism; form dimensionality is also understood as a type of self-focus, perhaps more in the context of the past (Exner, 1974, p. 259). Thus, this factor comprises contents potentially reflecting social isolation and movement indicative of stress and perhaps passive indecision, plus several determinants reflecting self-focus, and negative affect, with the "situational" indicator receiving a higher factor loading than the supposed sign of more longstanding depression. This factor correlated negatively with each of the five BSAG factors, with a trend toward significant (negative)

relationship appearing with the Hostile/socially aggressive factor. Perhaps, then the hostile and socially aggressive individual is not inclined toward social isolation or the stresses associated with negatively valenced insight or self reflection. This factor also shared more than 25% of variance with the content-determinant factor incorporating explosive inanimate activities, the Rorschach factor reflecting integrated responses, and, specifically, integrated developmental quality, adequate form quality, and frequency of responses involving relationships among parts (Zf).

Both inanimate and animal movement in blocked form appeared together as members of Content-determinant Factor IV, thus suggesting that non-human movement potential might indeed be a singular entity. Furthermore, this factor included negative color with form secondary, and blood and visceral anatomy, which would be consistent with traditional interpretations suggesting feelings of passivity, bodily concern, and struggles with feelings of hostility (Exner and Weiner, 1982; Piotrowski, 1957). While there was only a trend toward correlating negatively with the Withdrawn-lethargic behavior factor, bivariate relationships where more than 25% common variance was accounted for appeared between this factor and the Rorschach factor reflecting maladaptive responses (Factor II), and specifically with the occurrence of special scores. At best, these results suggest that students

perceiving blood, guts, life destructive color, light, or blocked non-human movement on the Rorschach are not inclined to appear withdrawn or lethargic in the classroom. Unfortunately, this study has not shed light more specifically as to just how students perceiving such phenomena are likely to behave in a school setting.

Of all content-determinant factors, Factor V, incorporating active inanimate movement--along with explosions, fire, smoke, transportation, and modern-futuristic phenomena--is perhaps the most cohesive so far. More than for the others, responses can be anticipated that would reflect high scores on this factor; a rocketship taking off or a volcano exploding are typical examples. Current theories might interpret this factor as reflecting intense situational stress (Exner and Weiner, 1982; Weiner, 1984, Note 3) and/or as indicative of "prototypal roles in life which the individual feels to be desirable and pleasant but unrealizable; the individual is convinced that he is subjectively incapable of actuating the desired life role..." (Piotrowski, 1974, p. 210). It shared 25% of variance with Content-determinant Factor III, with items suggestive of social isolation, self focus, and distressing affect. Hence, some frustrating ideation may be associated with socially-isolated individuals, inclined toward negative or distressing introspection. The question of how this type of individual might behave in the classroom, however remains

unanswered at this time.

While monsters, without specific animal characteristics, did not emerge as significant members of the content-determinant factor structure, neither did distanciated humans in general, or even human-like details. Correlations with other contents were generally low, suggesting specific or uniquely different patterns of variation. Creatures, their animal counterparts, on the other hand, did appear, and they were significantly related to prehistoric, fantasy and extinct animals, and to animal-like details. These categories were part of Content-determinant Factor VI, along with color projection, form-dominated white color, and form dominated black/white combinations. What appears most noteworthy here is the separation of white achromatic color from black and gray, its association with color projection, and its presence only as a form-dominated determinant. Color projection has been described by Weiner (Note 3) as an extreme example of denial as a psychological defense mechanism. It is believed to occur very infrequently and to represent a subject's efforts to ward off depressive feelings by trying to see things in a more pleasant and optimistic manner. Interpreting shading responses in general as a means of coping with anxiety, Piotrowski (1974) described the perception of white as color specifically as reflecting similar active defense mechanisms attempting to cover up or compensate for feelings of depression. In fact, CP

occurred in only 5% of this sample as did FC'$_w$, while FC'$_{b/w}$ occurred in only 4% of subjects. Furthermore, (Ad) was offered as a content by 7% of the group, with creature and prehistoric or extinct animal responses occurring in 17% and 21% of participants, respectively. Thus, several fairly low frequency phenomena (excepting monsters and prehistoric animals) appeared here with some cohesiveness. Rorschach theory might offer the interpretation that these variables reflect an individual's efforts to cope with or overcome depressive feelings, and to the extent such defenses are effective, the absence of a correlation with depressed or even withdrawn classroom behaviors might be understandable. On the other hand, the presence of more positive correlations with any classroom behavior would ultimately enhance the interpretability of this factor. The factor was, however, strongly correlated with FQ+, a synthesized and well articulated response, and it showed trends in relationship with common detail-space responses (consistent with the presence of responses to white as color) and to fire setting history, another very low frequency phenomenon (present for only 4% of this group). Perhaps then a cognitive style involving more synthesis is associated with efforts to ward off feelings of depression reflected in the use of white space as color and the perception of animals in distanciated (fantasy) and distanciated detail form.

Factor VII of contents and determinants was included for

analysis despite its having only three members, because it also seemed cohesive in terms of Rorschach theory. Comprised totally of percepts lacking in form, it might initially be understood as reflecting uncontrolled affect. Interestingly it included both positive color and black shading, seemingly opposing phenomena. Color has been understood as reflecting impulsive affect, here with a life enhancing (or better, without a life destructive) quality due to its association with colors and ink as content. Black shading, on the other hand, is believed to be indicative of some depressive feeling, intensely withheld from outward expression, potentially disruptive of a subject's cognitive equilibrium (Exner, 1972, p. 284). Devoid of any correlations with BSAG behaviors, it was associations with other Rorschach variables that helped to explain this factor. Not surprisingly, it was highly correlated with the perception of responses lacking form. It was also associated with the use of the whole blot with white space in making responses, with vague developmental quality, i.e., where a percept has no specific form requirements (both scores that did not appear as members of any Rorschach factor). In addition, this factor was negatively correlated with the presence of popular responses. With responses of ink in particular suggesting some avoidance of the task, perhaps this factor, with indicators of uncontrolled affect and overly constricted feelings of gloom and depression, is reflective of

some effort at resisting the task, but with strong emotional undertones.

Rorschach data factors. Factor I, comprising the remaining Rorschach data (Rfac1), was called the General response factor. It included significant loadings for total number of responses, both common and unusual detail locations, upright and sideways positions, integrated and consistent developmental qualities, ordinary and weak form qualities, pairs, populars and near populars. It was somewhat associated with fire setting history and with general health, but not with any BSAG behavioral factors. While only with Content-determinant Factors I and II (C-Dfac1, C-Dfac2) was more than 15% common variance accounted for, there was some trend toward significant correlation with all content-determinant factors except Factor VII (C-Dfac7), which had no form requirements to speak of, making most of the components of this factor irrelevant to it. The inclusion of ordinary and weak form qualities on the same factor was interesting in that ordinary form has been understood as reflective of "good" form, while weak form has been considered "poor" (Exner, 1972). However, the distinction between weak and minus responses actually requires judgment by the examiner; weak responses are those that don't appear in form quality tables, but which the examiner can also perceive on the blot as the subject describes them. Thus, while weak responses are infrequent, poor

responses are actually unusual. In fact, Exner and his colleagues in their revision of The Comprehensive System, Volume 1 will include more extensive form tables than currently exist to help clarify this issue. They also have instituted computation of the X-%, or percent of all responses that are of distinctly poor form quality (Weiner, Note 3). Thus, the inclusion of weak and good form quality on the same factor suggests more similarity than difference between these scores and is also in keeping with current thinking.

The inclusion of both integrated and consistent developmental quality scores is not so readily understood. One requires synthesis of blot attributes reflecting more cognitive sophistication than the other which suggests more ordinary but acceptable use of the blot and its components. Examination of bivariate correlations suggests that while both share several associations, they differ in strength of correlation and in several items to which one is related but not the other. In fact, integrated developmental quality is strongly related (i.e., accounts for more than 25% common variance) to C-Dfac1, with humans, abstractions, human movement, fish, and black achromatic color with secondary form, and to C-Dfac3 including items reflecting introspection and social isolation. Perhaps these contents involve more complex types of cognitive activity. Furthermore, while it shared high correlations with adequate form quality and with populars, Ordinary developmental

quality had even higher correlations with these pieces of Rorschach data. As reflected in Rorfac3, integrated developmental quality shares more than one quarter of its variance with the frequency of Z-scores, which also reflect integration of response aspects. Consistent developmental quality, on the other hand, is more strongly correlated with a greater number of variables comprising this General response factor. It shares more than 25% of variance with C-Dfac2 (with insects, domestic/farm animals, animal details, passive animal movement and pure form), as well as with total number of responses, the upright card position, both common and unusual detail locations, adequate form quality (perceptual accuracy), and pairs. All of these would be expected in every Rorschach record to some degree.

Maladaptive responses, in contrast, are captured specifically in Rorschach Factor II (Rfac2), comprising unusual detail locations, poor developmental and form qualities, and the presence of special scores. More than 25% of its variance is shared with C-Dfac4, including blood, visceral anatomy, light, and negative color with secondary form and blocked movement, both animal and inanimate. No significant relationships emerged with any behavioral or background variables, so interpretability beyond the point of describing current Rorschach theory is limited. It is noteworthy, however, that Developmental Quality is no longer scored in the

same fashion as it was in this study. Exner's current criteria have eliminated the DQ- score, which had been a predictable correlate of FQ-, by definition: "assigned whenever the Form Quality score is also - , and when the DQv score is not applicable" (Exner, Weiner and Schuyler, 1979, p. 21). The new scores more accurately assess cognitive syntheses independently from perceptual accuracy (Weiner, 1984, Note 3). It is likely, then, that the components of this Maladaptive response factor might change as the most recent scoring rules are applied.

With strong loadings on Whole blot locations, Integrated developmental quality, and frequency of Synthesized responses, plus a negative loading for response Rejections, Rorschach Factor III (Rfac3) clearly reflects the Integrated response for which it was named. It is strongly related to C-Dfac3, containing items believed to characterize negative self-reflection and social isolation. One might hypothesize that introspection involves a relatively complex cognitive process, but not necessarily higher measured intelligence. There were no significant correlations with BSAG behaviors or other background variables.

Total Rorschach factors. The three total Rorschach factors (Rorfac I, II, III) incorporated all of the Rorschach data factors and each of the six Content-determinant factors with more than three items. They included so much Rorschach data as to make interpretation nearly impossible, particularly

in the absence of any non-Rorschach correlates where even 25% of variance was shared. In fact, their composition has actually been discussed above as correlates of each of its Factor-items (i.e., Rorschach data factors and Content-determinant factors) were articulated.

Twelve pieces of Rorschach data were not included as part of these factor structures. Response Additions, Changes, and Initial Response Times had no correlates to speak of. It is noteworthy, however, that Exner and his associates are no longer recording Initial Response Time, finding it tends not be recorded with sufficient accuracy and that neither IRT nor total time per card have any correlates found to date (Weiner, 1984, Note 3). Neither adding responses as an after-thought, nor changing aspects of it during inquiry hold demonstrable meaning. While upside-down and turned completely to upright card positions were not factor members, both had correlations from approximately .25 to .45 with other Rorschach variables. They may indeed reflect meaningful behaviors to be explored further.

None of the locations involving space, with the whole blot, with common details, or with unusual details shared more than 25% variance with any other variable, though some trends did emerge. Correlations greater than .30 were found between WS responses and C-Dfac3 (Introspection/social isolation), and Zf, frequency of integrated response. Common details with

space (DS) responses showed potential relationships with C-Dfac5 and C-Dfac6 (active inanimate movement, and monsters with color projection and white color), R, DQ+ and FQ+. The Maladaptive response Rorschach factor (Rfac2), DQ-, FQ- and special scores all shared correlations greater than or equal to .30 with the DdS score. There does not seem to be evidence to pool these three scores, considering space responses as a singular entity, as they are each related to different contents, determinants, and specific Rorschach data. On the other hand, it is not clear whether these relationships would strengthen or weaken with different sample compositions, so their elimination is not warranted either.

Vague developmental quality, again while not a factor member, showed associational trends with C-Dfac3) (Introspection/social isolation) and with Dd locations and FQ-. This warrants further exploration, particularly in light of the new DQ scoring criteria mentioned above. Of the two Form quality scores that were not factor members, FQO, where there was no form, was significantly correlated ($r = .75$) with C-Dfac7, including items with no form requirements themselves. On the other hand, the score indicating well articulated form, FQ+, was highly correlated with C-Dfac6, including monsters, color projection, and white color ($r = .71$). The hypothesis that these kinds of responses reflect some type of verbal ability gains speculative support, with a .29 correlation found

with Reading NCE. Other potential correlates are the Introspection/social isolation factor, the Integrated response factor, DS locations, DQ+, and Zf. This, too warrants continued examination as to its relevance and meaning.

Interpretation and recommendations for further research.

Negation of the primary research hypotheses motivating this study warrants careful exploration. That no significant statistical relationship could be demonstrated between factors derived from teacher observations of classroom behavior and those emerging from actuarial reduction of complex Rorschach scores is certainly meaningful, with definite implications for special educators as well as those committed to research pursuits.

In general, results suggest that there is no common variance between these two forms of personality expression. The same students, under different circumstances, with different kinds of tasks recorded by independent observers share little that could be identified via this series of multivariate analyses. Even with a number of low frequency items included, the BSAG presented an essentially normal distribution, while many Rorschach items for the identical individuals were highly skewed. Perhaps in examining so much data together, potentially meaningful but more simple relationships were overlooked. Piotrowski has suggested that, "important as they are—when carried out on a large scale—the

computed correlations among components based on records of different subjects (one record from each subject) are not as informative as correlations based on repeated examinations of the same subject" (1974, p. 411). In fact, he predicted the low and non-significant correlations found in this study (1982, Note 4). One wonders whether breakdown of subjects by age and sex (which yield substantially different BSAG factor structures according to McDermott (1984)), or even by special education classification or psychiatric diagnosis might yield more psychologically meaningful and statistically significant results. Thus, a multiple regression design, for a specifically defined group, using a particular behavioral factor, and Rorschach factors based more on theoretical constructs than the statistical criteria more heavily relied upon here (in keeping with Weiner's notion of Rorschach research (1983; 1984, Note 3)) might be more fruitful.

For example, a small group of students rejected Rorschach cards. If the BSAG factor scores for just this group were correlated with Content-determinant and Rorschach data factors, would more significant results emerge? Perhaps those items occurring with sufficient frequency but excluded from the various factor analyses performed here would prove to be more related, or more correlated with behaviors and/or personality variables. Furthermore, it is conceivable, given Exner's more recent work (Exner and Weiner, 1982), that special scores

should be examined individually, rather than collapsed as they were in this study. Currently there are separate weights assigned to special scores believed to more accurately capture the severity and degree of deviation from normality (Weiner, 1984, Note 3). In addition, ratios and sums were not examined in the scope of this study, so their import at this point is unclear. However, in light of recent reports of ongoing research, new scales and scores are being developed based on weighted sums and relationships among variables (Exner and Weiner, 1982; Weiner, 1984, Note 3). An encouraging result, in the context of overall negative findings, was the derivation of Content-determinant factors, which not only seemed to corroborate some of this work, but held the greatest potential for relating to both behavioral and classification data.

Another approach might be to utilize the Rorschach as the instrument of clinical judgment it appears to be in the hands of so many of its advocates. Would teacher-derived descriptions of classroom maladjustment correlate with clinician-generated decisions based on overall Rorschach data as to the potential adjustment or adjustment level currently experienced by a given individual? Could factor scores such as those derived here be used in a manner that would enhance the impact and accuracy of such decisions? Perhaps Rorschach data could aid in the determination of whether teacher reports of maladaptiveness reflect individual teacher-child conflict,

child-environment conflict, or the need for broader-based educational/environmental remediation. Whether behavioral validation can be demonstrated for the Rorschach or not, practitioners who believe in its efficacy will continue to use it. Although this study was unable to articulate some manner in which information derived from the Rorschach enhances psycho-educational decision making, the absence of better-validated or more relevant and reliable instruments used to evaluate the impact of personality factors on school performance certainly warrants continued efforts in this direction. Clearly measures of intelligence, achievement, and perception alone are inadequate for making meaningful decisions concerning a child's educational needs. Unfortunately, we as school psychologists have not fulfilled our responsibility to develop, provide, and use adequate instruments to achieve our goal of providing an appropriate (and effective) education for every child.

On the other hand, the absence of significant correlations, even at the bivariate level, might make proponents of an actuarial approach skeptical of further research along these lines. The validity of both types of instrumentation for determining special education placement is questionable, particularly in light of the low hit rates revealed in the final discriminant analyses. These results raise broad questions concerning educational and psychiatric

classification of school-aged children. While Rorschach data factors and BSAG factors were equally able to accurately place students in the special education categories of Socially-emotionally disturbed (SED) and Brain-damaged (BD), both had hit rates of only 53%. In other words, neither behavioral data nor personality data could identify the type of special education classification to which a child had been assigned more than one half of the time. Given that these assignments are made based on information from a variety of sources, including both personality and classroom behaviors, one would have rightfully expected greater accuracy from both of these sources. Findings clearly point to the absence of clearly defined criteria for the determination of specific special education classifications. At present, it seems to be primarily a matter of opinion, though whose is unclear. The fact that 50% of the students are misclassified as to special education assignment, whether using behavioral or personality data, accentuates the need for well-articulated, reliable, and meaningful standards. As long as it is necessary to classify students for special education purposes, we must develop far more adequate means and methods of doing so. While several states--including South Carolina, North Carolina, and Tennessee--have outlawed the use of projective tests entirely for making special education decisions, others mandate behavioral support (from both parents and teachers in some

cases) for any personality data offered. The results from this study, however, suggest that information derived from neither one of these sources is better than the other at accurately identifying students already classified, and neither is adequate alone.

As positive results would not have closed doors for further study, neither should the negative findings reported here. Researchers such as Hook and Rosenshine (1979) have reported that teachers are essentially inaccurate in their descriptions of classroom behavior; the Rorschach has been many times criticized for lack of validity, poor reliability, and inordinate amount of inference involved in decision making (Parker, 1980). Teachers, however, remain our best source of information concerning a child's performance in the classroom, academically, socially and in terms of overall adjustment. Similarly, the Rorschach holds many clear advantages over other methods currently used by school psychologists (the Bender-Gestalt test, Human Figure Drawings, Sentence Completion Tests, and Projective Story Tests) to assess the emotional functioning of children.

While classroom behaviors noted by teachers and Rorschach behaviors recorded by an independent observer were not found to be correlated in this study, they do obviously share the common ground of the child who singularly expressed both types of behaviors. Perhaps, as Piotrowski has suggested, the Rorschach

has provided more of "an inventory of possible behavior patterns, all of which are never actuated simultaneously" (1974, p. 191). He believes, furthermore, that "the chances of any prototypal role being realized in overt behavior vary with the significance of the social situation facing the individual at the time, with the external opportunities of acting out the role tendency, with the intensity and quality of anxiety and with the variety and intensity of all prototypal roles indicated by all the M and FM produced by the individual" (p. 191). The classroom, it follows, is but one set of circumstances for carrying out one's behavior potentials. In other words, while classroom and Rorschach behaviors are not demonstrably related to each other, a mediating variable could be what directly links the two; both have been produced by the same individual, just under different circumstances. In the context of special education decision making, the next step might be to more definitively articulate exactly what constitutes the need for special education services. We have far to go in understanding those aspects of a child's school behavior, defined as the product of personality and environment, necessitating the institution of individualized instruction and auxiliary services. There is obviously an emotional component to that behavior, influencing how and when and under what conditions it will be expressed, as well as how one learns and interacts with teachers and with fellow

students. Perhaps in better defining those aspects of a child's achievement, learning patterns, and school behavior that legitimately leads to a special education referral, we will be better able to identify those links between responses to the classroom and to the Rorschach Inkblot Test.

In sum, the goal of reciprocally validating the Rorschach and the Bristol Social Adjustment Guides was not achieved within the scope of this study. Instead, factors specific to this population were identified for each test, lending support to the notion of sample specific norming for school-based instrumentation. Results suggest that a factorial approach to the Rorschach, specifically in terms of examining contents and determinants, holds potential validity. With neither type of observation able to correctly classify more than 50% of the group by special education category, future research might focus on the development of clear and attainable standards for the identification and assessment of children in need of specialized educational services, which, in turn, may lead to the development of more effective and successful programs of remediation.

Reference Notes

1. Elkund, S. J. Psychological test usage among school psychologists. Paper presented at the meeting of the National Association of School Psychologists, Washington, D.C., April, 1980.
2. Johnson, G., & Cini, K. Prevalence and use of projective techniques by Illinois school psychologists. Unpublished Manuscript. Eastern Illinois University, Charleston, Illinois, 1983.
3. Weiner, I. J. Presentation at Rorschach Workshops. Chicago, Illinois, December, 1984.
4. Piotrowski, Z. M. Personal Communication. Philadelphia, Pa., 1981.
5. Pressley, P. J. Personal Communication. Philadelphia, Pa., 1979, 1981.

References

Abrams, E. W. Predictions of intelligence from certain Rorschach factors. Journal of Clinical Psychology, 1955, 11, 81-84.

Achenbach, T. M. Psychopathology of childhood: Research problems and issues. Journal of Consulting and Clinical Psychology, 1978, 46, 759-776.

Adcock, C. A. Factorial approach to Rorschach interpretation. Journal of General Psychology, 1951, 44, 261-272.

American Psychological Association. Standards for educational and psychological tests. Washington, D.C., 1974.

American Psychiatric Association, Diagnostic and statistical manual of mental disorders (DSM-II) (2nd ed.). Washington, D.C., 1968.

American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-III) (3rd ed.). Washington, D.C., 1980.

Ames, L. B., Metraux, R. W., Rodell, J. L., & Walker, R. N. Child Rorschach responses (Revised Edition). New York: Bruner/Mazel Publishers, 1974.

Anastasti, A. Psychological testing (4th ed.). New York: MacMillian Publishing Co., Inc., 1976.

Aronow, E., & Reznikoff, M. Rorschach content interpretation. New York: Grune & Stratton, 1976.

Bass, B. M., & Berg, A. I. (Eds.). Objective approaches to personality assessment. Princeton, N.J.: D. Van Norstrand, 1959.

Beck, S. L., Beck, A., Levitt, E., & Molish, H. Rorschach's Test, Volume 1. New York: Grune & Stratton, 1961.

Bender, I. Psychopathology of children with organic brain disorder. Springfield, Illinois: Charles C. Thomas, 1956.

Bender, L. The visual motor gestalt function in 6 and 7 year old normal and schizophrenic children. In J. Zubin & G. Jervis (Eds.), Psychopathology of Mental Development. New York: Grune & Stratton, 1967, 544-563.

Bolander, K. Assessing personality through tree drawings. New York: Basic Books, 1977.

Borgatta, E. F., & Eschenbach, A. E. Factor analysis of Rorschach variables and behavioral observation. Psychological Reports, 1955, 1, 129-136.

Century Diagnostics, Inc. Computer Interpreted Rorschach. Tempe, Arizona, 1979.

Ciminero, A. R., Calhoun, K. S., & Adams, H. E. (Eds.). Handbook of behavioral assessment. New York: John Wiley & Sons, 1977.

Coan, R. A factor-analysis of Rorschach determinants. Journal of Projective Techniques, 1956, 20, 280-287.

Cohen, J. A coefficient of agreement for nominal scales. Educational and Psychological Measurement, 1960, 20, 37-45.

Cox, S. M. A factorial study of the Rorschach responses of normal and maladjusted boys. Journal of Genetic Psychology, 1951, 79, 95-115.

Cronbach, L. J. Statistical methods applied to Rorschach Scores: A review. Psychological Bulletin, 1949, 46, 393-429.

Cronbach, L. J., & Meehl, P. E. Construct validity in psychological tests. Psychological Bulletin, 1955, 52, 281-302.

CTB/McGraw-Hill. Comprehensive Tests of Basic Skills, Form U, Monterey, California, 1981.

Curtiss, G., Feczko, M., & Marohn, R. Rorschach differences in normal and delinquent males. Journal of Youth and Adolescence, 1979, 8, 379-392.

Dalby, J. T., & Vale, H. L. Self-esteem and children's human figure drawings. Perceptual and Motor Skills, 1977, 44, 1279-1282.

Dana, R. H. Six constructs to define Rorschach M. Journal of Projective Techniques and Personality Assessment, 1968, 32, 138-145.

Davis, R., Butler, N. R., & Goldstein, N. From birth to seven. Second report of the National Child Development Study. London: Longman and National Children's Bureau, 1972.

DiLeo, J. H. Children's drawings as diagnostic aids. New York: Bruner/Mazel, 1973.

Edelbrock, C., & Achenbach, T. M. A typology of Child Behavior Profile patterns: Distribution and correlates for disturbed children aged 6-16. Journal of Abnormal Child Psychology, 1980, 8, 441-470.

Eschenbach, A. E., & Borgatta, E. F. Testing behavior hypotheses with the Rorschach: An exploration in validation. Journal of Consulting Psychology, 1955, 19, 267-273.

Exner, J. E. The Rorschach: A Comprehensive System. New York: John Wiley & Sons, 1974.

Exner, J. E. The Rorschach: A comprehensive system. Volume 2: Current research and advanced interpretation. New York: John Wiley & Sons, 1978.

Exner, J. E. But it's only an inkblot. Journal of Personality Assessment, 1980, 44, 562-577.

Exner, J. E. What you always wanted to know about the Rorschach but were afraid to ask. Interview with Elizabeth Bard in Communique. Cuyahoga Falls, Ohio: National Association of School Psychologists, Vol. 13, No. 1, 1984.

Exner, J. E., Armbruster, G. L., & Viglione, D. The temporal stability of some Rorschach features. Journal of Personality Assessment, 1978, 42, 474-482.

Exner, J. E., & Bryant, E. A. A study of temporal consistency over a seven day period. Workshops Study No. 205 (unpublished), Rorschach Workshops, 1979.

Exner, J. E., & Exner, D. E. How clinicians use the Rorschach. Journal of Personality Assessment, 1972, 36, 203-212.

Exner, J. E., & Martin, L. S. The Rorschach: A history and description of the comprehensive system. School Psychology Review. 1983, 12, 407-413.

Exner, J. E., & Weiner, I. B. The Rorschach: A comprehensive system. Volume 3: Assessment of children and adolescents. New York: John Wiley & Sons, 1982.

Exner, J. E., Weiner, I. B., & Schuyler, W. A. A Rorschach workbook for the comprehensive system. Bayville, New York: Rorschach Workshops, 1976.

Fiske, D. W. Variability of responses and the stability of scores and interpretations of projective protocols. Journal of Projective Techniques, 1959, 23, 263-267.

Fiske, D. W., & Baughman, E. E. Relationship between Rorschach scoring categories and the total number of responses. Journal of Consulting Psychology, 1953, 48, 25-32.

Ford, M. The application of the Rorschach test to young children. University of Minnesota. Inst. Child Welfare Monographs, 1946, No. 23.

Frank, G. On the validity of hypotheses derived from the Rorschach I: The relationship between color and affect. Perceptual and Motor Skills, 1976, 43, 411-427.

Fuller, G. R. , Preuss, M., & Hawkins, W. F. The validity of the human figure drawings with disturbed and normal children. Journal of School Psychology, 1970, 8, 54-56.

Goldberg, P. A. A review of sentence completion methods in personality assessment. In B. Murstein (Ed.), Handbook of Projective Techniques, New York: Basic Books, Inc., 1965, 777-821.

Goldfried, M. R., Stricker, G., & Weiner, I. G. Rorschach handbook of clinical and research applications. Englewood-Cliffs, N.J.: Prentice-Hall, 1971.

Goodenough, F. L. Measurement of intelligence by drawings. New York: Harcourt Brace & World, 1926.

Gough, H. G. Clinical versus statistical prediction in psychology. In Postman, L. (Ed.), Psychology in the Making. New York: Knopf, 1963.

Guilford, J. P. New standards for test evaluation. Educational Psychological Measurement, 1946, 6, 427-438.

Hale, R. L. A factor analytic study of the Bristol Social Adjustment Guides in a rural school population. Psychological Reports, 1978, 42, 215-218.

Halpern, F. A. A clinical approach to children's Rorschachs. New York: Grune & Stratton, 1953.

Hammer, E. F. The House-Tree-Person (H-T-P) Drawings as a projective technique with children. In A. I. Rabin & M. R. Haworth (Eds.), Projective techniques with children. New York: Grune & Stratton, 1960.

Harris, D. B. Children's drawings as measures of intellectual maturity. New York: Harcourt Brace & World, 1963.

Harris, R. E., & Christiansen, C. Prediction of response to brief psychotherapy. Journal of Psychology. 1946, 21, 269-284.

Hart, D. H. The Hart Sentence Completion Test for Children. Unpublished manuscript. Salt Lake City: Educational Support Systems, Inc., 1972.

Hart, D. H., Kehle, T. J., & Davies, M. V. Effectiveness of sentence completion techniques: A review of the Hart Sentence Completion Test for Children. School Psychology Review, 1983, 12, 428-434.

Hertz, M. R. The reliability of the Rorschach inkblot test. Journal of Applied Psychology, 1934, 18, 461-477.

Hertz, M. R. Frequency tables for scoring Rorschach respones. (5th ed.). New York: University Press Books, 1970.

Hertzman, M., Orlansky, J., & Seitz, C. P. Personality organization and anoxia tolerance. Psychosomatic Medicine, 1944, 6, 317-331.

Holt, R. R. Yet another look at clinical and statistical prediction: Or, is clinical psychology worthwhile. American Psychologist, 1970, 25, 337-349.

Holtzman, W. H. Objective scoring of projective techniques. In B. M. Bass and I. A. Berg (Eds.), Objective approaches to personality assessment. Princeton, N.J.: D. Van Nostrand, 1959, 119-145.

Holzberg, J. D. Reliabiity re-examined. In M. Rickers-Ovsiankina, (Ed.), Rorschach Psychology, New York: John Wiley & Sons, 1960, 361-379.

Holzberg, J. D., & Wexsler, M. The predictability of schizophrenic performance on the Rorschach test. Journal of Consulting Psychology, 1950, 14, 395-399.

Hook, C. M., & Rosenshine, B. V. Accuracy of teacher reports of their classroom behavior. Review of Educational Research. Winter, 1979, 49, 1-12.

Hsu, E. H. The Rorschach responses and factor analysis. Journal of General Psychology, 1947, 37, 129-138.

Ichimura, J. Ten year follow-up study on the early prediction of juvenile delinquency by means of the Rorschach Test. Japanese Psychological Research, 1966, 8, 151-160.

Ilg, F., Ames, L. B., & Apell, R. School readiness as evaluated by Gesell developmental, visual and projective tests. Genetic Psychological Monographs, 1965, 71, 61-69.

Kanfer, F., & Saslow, G. Behavioral analysis: An alternative to diagnostic classification. Archives of General Psychiatry, 1965, 12, 529-538.

Kaufman, A. S. Intelligent testing with the WISC-R. New York: John Wiley & Sons, 1979.

Keller, H. R. Issues in the use of observational assessment. School Psychological Review, 1980, 9, 21-30.

Kelley, D. M., Margulies, H., & Burrera, S. E. The stability of the Rorschach method as demonstrated in electric convulsive therapy cases. Rorschach Research Exchange, 1941, 5, 35-43.

Kelly, E. L., & Fiske, D. W. The prediction of performance in clinical psychology. Ann Arbor: University of Michigan Press, 1951.

Kerr, M. Temperamental differences in twins. British Journal of Psychology, 1936, 27, 51-59.

Kessler, J. Psychopathology of childhood. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966.

Kessler, J., & Wolfenstein, C. M. A comparison of Rorschach retests with behavior changes in a group of emotionally disturbed children. American Journal of Orthopsychiatry, 1953, 23, 740-754.

Koppitz, E. The Bender gestalt for young children. New York: Grune and Stratton, Inc., 1964.

Koppitz, E. M. Psychoiogical evaluation of children's Human Figure Drawings. New York: Grune & Stratton, 1968.

Koppitz, E. M. The Bender gestalt test for young children: Research and application 1963-1973, (Volume 2). New York: Grune & Stratton, 1975.

Koppitz, E. M. Personality assessment in the schools. In C. Reynolds and T. Gutkin (Eds.). The Handbook of School Psychology. New York: John Wiley & Sons, 1982.

Koppitz, E. M. Projective drawings with children and adolescents. School Psychology Review, 1983, 12, 421-427.

Levitt, E., & Truumaa, A. The Rorschach technique with children and adolescents. New York: Grune & Stratton, 1972.

Lingren, R. H. An attempted replication of emotional indicators in human figure drawings by shy and aggressive children. Psychological Reports, 1971, 29, 35-38.

Lubin, B., Wallis, P. R., & Paine, C. Patterns of psychological test usage in the United Stated: 1935-1969. Professional Psychology, 1971, 2, 70-74.

Machover, K. Human figure drawings of children. Journal of Projective Techniques, 1953, 17, 85-91.

Martin, R. P. The ethical issues in the use and interpretation of the Draw-a-Person test and other similar projective procedures. Ethics Column, The School Psychologist (Division 16, APA Newsletter), 1983, 37, (6, 8).

Mayman, M. Reality contact, defense effectiveness, and psychopathology in Rorschach form-level scores. In Klopfer, B., Meyer, M. and Brawer, F. (Eds.), Developments in Rorschach technique. III: Aspects of personality structure. New York: Harcourt, Brace, Jovanovich, 1970, p. 11-46.

McDermott, P. A. Prevalence and consituency of behavioral disturbance taxonomies in the regular school population. Journal of Abnormal Child Psychology, 1980, 8, 523-536. (a)

McDermott, P. A. Principal components analysis of the revised Bristol Social Adjustment Guides. British Journal of Educational Psychology, 1980, 50, 223-228. (b)

McDermott, P. A. The observation and classification of exceptional child behavior. In R. T. Brown and C. R. Reynolds (Eds.). Psychological Perspectives in Childhood Exceptionality. John Wiley & Sons, Inc., 1983. (a)

McDermott, P. A. A syndromic typology for analyzing school children's disturbed social behavior. School Psychology Review, 1983, 12, 250-259. (b)

McDermott, P. A. Child behavior disorders by age and sex based on item factoring of the Revised Bristol Guides. Journal of Abnormal Child Psychology, 1984, 12, 250-259. (b)

Meehl, P. E. Clinical versus statistical prediction. Minneapolis: University of Minnesota Press, 1954.

Meehl, P. E. Structured and projective tests: Some common problems in validation. Journal of Projective Techniques, 1959, 23, 268-272.

Meehl, P. E. Seer over sign: The first good example. Journal of Experimental Research in Personality, 1965, 1, 27-32.

Meehl, P. E. Psychodiagnosis. Selected papers. New York: W. W. Norton Company, Inc., 1973.

Miller, L. C. Dimensions of adolescent psychopathology. Journal of Abnormal Child Psychology, 1980, 8, 161-173.

Montalto, F. D. An application of the Group Rorschach technique to the problem of achievement in college. Journal of Clinical Psychology, 1946, 2, 254-260.

Mosteller, F., & Bush, R. R. Selected quantitative techniques. In G. Lindzey (Ed.), Handbook of Social Psychology (Volume 1). Cambridge, Mass.: Addison-Wesley, 1954, 289-334.

Murstein, B. I. Factor analysis of the Rorschach. Journal of Consulting Psychology. 1960, 23, 262-275.

Murstein, B. I. (Ed.) Handbook of projective techniques. New York: Basic Books, Inc., 1965.

National Computer Systems, The Exner Report. Minneapolis, Minnesota, 1983.

Ob aut, J. E., & Cummings, J. A. The projective approach to personality assessment: An analysis of thematic picture techniques. School Psychology Review, 1983, 12, 414-420.

Oskump, S. Overconfidence in case study judgments. Journal of Consulting Psychology. 1965, 29, 261-265.

Palmer, J. O. The psychological assessment of children. New York: John Wiley & Sons, Inc., 1970.

Parker, M. Editorial in School Psychology in Illinois. Illinois School Psychology Association Newsletter, December 1980.

Phillips, L., & Smith, J. G. Rorschach interpretation: Avanced technique. New York: Grune & Stratton, 1953.

Piotrowski, Z. A. Perceptanalysis. Ex. Libris, Philadelphia, 1974.

Piotrowski, Z., Candee, B., Bulinsky, B., Hohzhers, S., & Von Arnold, B. Rorschach signs in the selection of outstanding young male mechanical workers. Journal of Psychology, 1944, 18, 131-150.

Pressley, P., & Martin, F. Rorschach reponses of Amish and Mennonite children and adolescents. Paper presented at International Rorschach Congress VIII. Washington, D.C., September, 1981.

Prytula, R. E., & Hilard, D. N. Analysis of General Anxiety Scale for Children and Draw-A-Person measures of general anxiety level of elementary school children. Perceptual and Motor Skills, 1975, 41, 995-1007.

Quay, H. D. Classification. In H. C. Quay & J. S. Werry, (Eds.), Psychopathological disorders of childhood (2nd ed.). New York: Wiley, 1979.

Rapaport, D. Diagnostic psychological testing, Volume II. Chicago: Year Book publishers, 1946.

Rapaport, D., Gill, M. M., & Schafer, R. Diagnostic Psychological Testing. Revised edition. New York: International Universities Press, Inc., 1968, p. 222-515.

Rickers-Ovsiankina, M. A., (Ed.). Rorschach psychology, (2nd Ed.). Huntington, N.Y.: Robert E. Krieger Publishing Co., 1960.

Rickers-Ovsiankina, M. A., (Ed.). Rorschach psychology. Huntington, N.Y.: Robert E. Krieger Publishing Co., 1977.

Ritzler, B. A., & DelGaudio, A. C. A survey of Rorschach teaching in APA-approved clinical graduate programs. Journal of Personality Assessment, 1976, 40, 451-453.

Rorschach, H. Psychodiagnostics (4th ed.) New York: Grune & Stratton, 1949.

Ross, W. D., & Ross, S. Some Rorschach ratings of clinical value. Rorschach Research Exchange, 1949, 8, 1-9.

Rutter, M. A children's behavior questionnaire for completion by teachers: Preliminary findings. Journal of Child Psychology and Psychiatry, 1067, 8, 8-11.

Rutter, J. J., & Shaffer, D. DSM-III: A step forward or back in terms of the classification of child psychiatric disorders. Journal of the American Academy of Child Psychiatry, 1980, 19, 371-394.

SAS Institute, Inc., SAS Manual, SAS Institute, Inc., Carey, North Carolina, 1983.

Sattler, J. M. Assessment of children's intelligence and special abilities. Second edition. Boston, Mass: Allyn and Bacon, Inc., 1982.

Sattler, J. M. Identifying and classifying disturbed children in schools: Implications of DSM-III for school psychology. School Psychology Review, 1983, 12.

Seigel, M. The diagnostic and prognostic validity of the Rorschach test in a child guidance clinic. American Journal of Orthopsychiatry, 1948, 18, 119-133.

Sidowski, J. B., Johnson, J. H., & Williams T. W. (Eds.). Technology in mental health care delivery systems. Norwood, New Jersey: Ablex Corporation, 1980, p. 85-108.

SPSS, Inc., SPSS X Users guide. Chicago: McGraw Hill Book Company, 1983.

Stein, M. L. An empirical validation of the relation between Rorschach white-space and oppositionality. Perceptual and Motor Skills, 1973, 37, 375-381.

Stott, D. H. Manual for the Bristol Social Adjustment Guide, 1970 edition. San Diego, California: Educational and Industrial Testing Service, 1972.

Stott, D. H. Epidemiological indicators of the origin of behavior disturbances as measured by the British Social Adjustment Guides. Genetic Psychology Monographs, 1978, 97, 127-159.

Stott, D. H. The British Social Adjustment Guides. Therapeutic Education, 1979, 7, 34-44.

Stott, D. H., Marston, N. C., & Neill, S. Survey of maladjustment. Toronto: New Press, 1973.

Stott, D. H., Marston, N. C., & Neill, S. Taxonomy of behavior disturbance. London: Hodder & Stoughton, 1975.

Stott, D. H., & Wilson, D. M. The adult criminal as juvenile. British Journal of Criminology, 1977, 17, 47-57.

Swenson, C. H. Empirical evaluations of human figure drawings. In B. Murstein (Ed.) Handbook of Projective Techniques. New York: Basic Books, Inc., 1965, 609-654.

Swift, J. W. Reliability of Rorschach scoring categories with preschool children. Child Development, 1944, 15, 207-216.

Symonds, M. Adolescent fantasy. New York: Columbia University Press, 1949.

Thetford, W. N., Molish, H. B., & Beck, S. J. Developmental aspects of personality structure in normal children. Journal of Projective Techniques, 1951, 15, 58-78.

Trankell, A. The psychologist as an instrument of prediction. Journal of Applied Psychology, 1959, 43, 170-175.

Troup, E. A comparative study by means of the Rorschach method of personality development in twenty pairs of identical twins. Genetic Psychology Monographs, 1938, 20, 461-556.

Vernon, P. E. The Rorschach inkblot test, II. British Journal of Medical Science, 1933, 81, 1-27.

Vernon, P. E. Recent work on the Rorschach test. Journal of Mental Science, 1935, 81, 1-27.

Vukovich, D. H. The use of projective assessment by school psychologists. School Psychology Review, 1983, 12, 358-364.

Wade, T. C., Baker, T. B., Morton, T. L., & Baker, L. The status of psychological testing in clinical psychology: Relationships between test use and professional activities and orientations. Journal of Personality Assessment, 1978, 42, 3-10.

Watson, R. I., Jr. The sentence completion method in clinical diagnosis of mental disorders. In B. B. Wolmar (Ed.), New York: Plenum, 1978.

Weiner, I. B. Psychodiagnosis in schizophrenia. New York: John Wiley & Sons, 1966.

Weiner, I. B. Does psychodiagnosis have a future? Journal of Personality Assessment, 1972, 36, 534-546.

Weiner, I. B. Approaches to Rorschach validation. In M. A. Rickers-Ovsiankina (Ed.). Rorschach Psychology. Huntington, N.Y.: Robert E. Krieger, 1977.

Weiner, I. B. The future of psychodiagnosis revisted. Journal of Personality Assessment, 1983, 47, 451-461.

Weiss, D. J. Canonical correlation anaysis in counseling psychology research. Journal of Counseling Psychology, 1972, 19, 241-252.

Weitman, B. Some variables related to bias in clinical judgment. Journal of Clinical Psychology, 1962, 18, 504-506.

Widiger, T. A., & Schilling, K. M. Toward a construct validation of the Rorschach. Journal of Personality Assessment, 1980, 44, 450-459.

Wildman, R. W., & Wildman, R. W., II. An investigation with the comparative validity of several diagnostic tests and test batteries.

Williams, H. L., & Lawrence, J. F. Further investigation of Rorschach determinants subjected to factor analysis. Journal of Consulting Psychology, 1954, 18, 193-197.

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

Wirt, R., & McReynolds, P. The reliability of Rorschach number of responses. Journal of Projective Techniques, 1953, 17, 493-494.

Wittenborn, J. R. A factor analysis of discrete responses to the Rorschach inkblots. Journal of Consulting Psychology, 1949a, 13, 335-340.

Wittenborn, J. R. Certain Rorschach response categories and mental abilities. Journal of Applied Psychology, 1949b, 33, 330-338.

Wittenborn, J. R. A factor analysis of Rorschach scoring categories. Journal of Consulting Psychology, 1950, 14, 261-267.

Wittenborn, J. R. Some comments on confounded correlations among Rorschach scores. Journal of Consulting Psychology, 1959, 23, 75-77.

Wyatt, F. How objective is objectivity. Journal of Projective Techniques, 1968, 31, 3-19.

Zubin, J., Eron, L. D., & Schumer, F. An experimental approach to projective techniques. New York: John Wiley & Sons, Inc., 1965.

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Appendix A

Wordsworth Academy
Pennsylvania Ave. & Camp Hill Rd.
Fort Washington, PA. 19034
215-643-5400

January 1982

Dear Parents:

This letter is a request for your permission for your child to participate in a research program being conducted at Wordsworth Academy. The research is being conducted by Frances Martin, M.S., a doctoral candidate and instructor at the University of Pennsylvania and a Certified School Psychologist. The goal of the research is to try to see how the results of a widely used psychological test relate to a student's actual behavior as observed in school.

During a designated week, teachers will record observations of each child's classroom behavior by completing a brief questionnaire. In addition, Mrs. Martin will spend approximately 30 minutes with each child administering the Rorschach Test. She will then examine the similarity between information provided by classroom teachers and that provided by the personality test.

All information will stay within the school, be kept confidential and will not be part of the student's school records. For research purposes, Mrs. Martin will not include identifying data on the children. The personality testing is simple, only requiring that the child tell what 10 ink blots look like to him. This will take 15 - 30 minutes on one occasion during the school day.

We hope to further our diagnostic ability through such research and it may also help teachers understand children better.

If we do not hear from you by Wednesday, February 3, 1982, we will assume your permission for your student to participate. Should you have any questions, you may call Mr. Curcio at school or Mrs. Martin directly at 844-1136.

Sincerely,

Bernard Cooper

Bernard Cooper, Ph.D.
Director

BC/pr

NAME OF STUDENT _____

THE CHILD IN SCHOOL—(GIRL)

For the observation of students 5-16 years of age

The object of this Guide is to give a picture of the child's behavior and to help in the detection of emotional instability.

METHOD OF USE

Underline in ink the phrases which describe the child's behavior or attitudes over the past month or so. More than one item may be underlined in each paragraph, but do not underline any unless definitely true of the child. Add any remarks necessary beside the underlining, or at the end of the Guide. Where an item seems inappropriate because of age, etc., it can be ignored. If nothing is applicable, mark '—.' (nothing noticeable). There is no need to rule underlinings.

Name of Student _____

Age _____ Date of this record _____

Teacher making record _____

School _____

Interaction with Teacher

Greeting teacher:
Waits to be noticed / hails teacher loudly / greets normally / can be surly / never thinks of greeting / is too unaware of people to greet / n.n.

Helping teacher with jobs:
Always eager or willing / presses for jobs but doesn't do them properly / never offers but pleased if asked / will help unless she is in a bad mood / cannot bring herself to be that sociable / n.n.

Answering questions:
Always ready to answer / will answer except when in one of her bad moods / not shy but never volunteers an answer / gets confused and tongue-tied / shouts out or waves arm before she has had time to think / n.n.

Asking teacher's help:
Constantly seeks help when she could manage by herself / seeks help only when necessary; seldom needs help / too shy to ask / not shy but never comes for help / too lacking in energy to bother / tries to argue against teacher / n.n.

Talking with teacher:
Forward (opens conversation) / over-talkative, tires with constant chatter / normally talkative / avoids teacher but talks to other children / chats only when alone with teacher / inclined to be moody / difficult to get a word out of her / distant, never wants to talk.

Desire for approval or attention:
Unconcerned about approval or disapproval / appreciates praise / seems to go out of her way to earn disapproval / n.n.

Gets up to all kinds of tricks to gain attention / brings objects she has found even though not really lost / wants adult interest but can't put herself forward / keeps a suspicious distance / appreciates attention / n.n.

General manner with teacher:
Natural, smiles readily / over-friendly / shy but would like to be friendly / avoids contacts both with teacher and other children / sometimes in a bad mood / couldn't care whether teacher sees her work or not / quite cut off from people, you can't get near her as a person.

Liking for sympathy:	Doesn't make unnecessary fuss / likes sympathy but reluctant to ask / never appeals to adult even when hurt or wronged / never makes any sort of social relationship good or bad / n.n.
Classroom behaviour:	Too timid to be any trouble / too lethargic to be troublesome / generally well-behaved / misbehaves when teacher is engaged with others / openly does things she knows are wrong in front of teacher.
Truthfulness:	Always or nearly always truthful / tells fantastic tales / lies from timidity / lies without any compunction.
Response to correction:	Behaves better / responds momentarily but it doesn't last for long / too restless and overactive to heed even for a moment / becomes antagonistic / resentful muttering or expression for a moment or two / bears a grudge, always regards punishment as unfair / n.n.
	School Work
Paying attention in class:	Attends to anything but her work (talks, gazes around, plays with things) / so quiet you don't really know if she is following or not / apathetic, 'just sits' / you can't get her attention, 'lives in another world' / on the whole attends well.
Working by herself:	Works steadily / unmotivated, has no energy / has uncooperative moods / never gets down to any solid work (flips over pages of book without reading it, etc.) / not restless but works only when watched or compelled.
Manual tasks or free activity:	Seems afraid to begin / difficult to stimulate, lacks physical energy / never really gets down to job and soon switches to something else / invents silly ways of doing things / may spoil her work purposely / sticks to job.
Facing new learning tasks:	Will be cautious at first but has a try / has not the confidence to try anything difficult / likes the challenge of something difficult / has a hit-and-miss approach to every problem / shows complete indifference / n.n.
	Games and Play
Team games:	Plays steadily and keenly; with great energy / inclined to fool around / has to be encouraged to take part / always sluggish, lethargic / remains aloof in a world of her own / n.n.
	Bad loser (creates a disturbance when games goes against her) / bas sportsman (plays for herself only, cheats, fouls) / timid, poor spirited; can't let herself go / fits in well with team / n.n.
Informal play:	Plays childish games for her age / plays sensibly / healthily noisy and boisterous / tries to dominate and won't cooperate when she can't get her own way / starts off others in scrapping and rough play, disturbs others' games / shrinks from active play / has her own special solitary activity / n.n.

Attitudes to Other Children

190

Companionship:

Good mixer / associates with one other child only and ignores the rest / distant, ignores others / sometimes wanders off alone.
Mixes mostly with unsettled types / tries to buy favor with others / can never keep a friend long (tries to pal up with newcomers) / misuses companionship to show off or dominate / n.n.

Ways with other children:

Squabbles, makes insulting remarks / shows off (clowns, strikes silly attitudes, mimics) / gets on well with others; generally kind, helpful / spiteful to weaker children when she thinks she is unobserved / tells on others to try to gain teacher's favor / n.n.

Physical courage:

Too timid to stand up for herself or even to get involved in an argument / can stand up for herself / flies into a temper if provoked / attacks other children viciously / foolish or dangerous pranks when with a gang / very jumpy and easily scared / n.n.

Standing in line:

Behaves in a well-disciplined manner / is often the center of a disturbance / lets the more forward push ahead of her / tries to push in front of smaller children / n.n.

Personal Ways

Attendance:

Good / frequently absent for day or half-day / has had long absences / has been known to play truant / parent condones absences, malingering, etc. / stays away to help parent.

Belongings:

Looks after her things / careless, often loses or forgets books / destructive, defaces with scribbling / n.n.

Sitting at desk:

Sits lifelessly most of the time / sits quietly and meekly / twists about in her seat, slips onto floor, climbs about on desk, etc. / doesn't seem to understand that she should keep in her seat / slumps, lolls about / sits in a sensible way.

Nervous habits, fidgets, etc.:

Constantly restless (raps with pencil or ruler, shuffles with her feet, changes position) / makes aimless movements with her hands / has unwilled twitches, jerks / bites nails badly / sits reasonably still.

Other people's belongings:

Borrows books from desk without permission / snatches things from other children / has stolen within the school in an underhand, cunning way / has stolen in a way that she would be bound to be found out / has always respected the property of others / n.n.

Other deviant behavior:

Damage to public property (windows, trees, fences, public gardens) / damage to personal property (cars, delivery vehicles, occupied houses, private gardens, teachers' or workmen's belongings) / follower in mischief / uses bad language which she knows will be disapproved of / n.n.

Physique

General health: Frequent colds, tonsillitis, coughs; running nose; mouth breather / poor breathing, wheezy, asthmatic, easily winded / skin troubles, sores / complains of tummy aches, feeling ill or sick; is sometimes sick / headaches, bad turns, goes very pale / fits / nose-bleeding / sore, red eyes / very cold hands / running, infected ears / good health. 191

Physical defects: Bad eyesight (wears or should wear glasses) / squint / bulging eyes / poor hearing / clumsy, gawky (poor coordination) / contorted features (face screwed up on one side, eyes half closed, etc.) / holds body or limb in unnatural posture.

Speech: Stutters, stammers, can't get the words out / thick, mumbling, inaudible / jumbled / incoherent rambling chatter / babyish (mispronounces simple words) / n.n.

Size: Tall for age / ordinary / small / unusually small. Very fat / very thin / n.n.

Physical appearance: Attractive / not so attractive as most / looks undernourished / has some abnormal feature / n.n.

School Achievement

Classwork standard (for age): Reading (English): Good / average / poor / cannot read.
Arithmetic (Math): Good / average / poor / completely incompetent.

Anything special about this child which is not covered in the form:

Summary, recommendations; comments:

EDUCATIONAL AND INDUSTRIAL TESTING SERVICE
San Diego, California 92107

BSA 002

BRISTOL SOCIAL-ADJUSTMENT GUIDES – 1 and 2 Confidential BG-1 and -2/DF

THE CHILD IN SCHOOL — DIAGNOSTIC FORM 1970 EDITION

Name _____ Sex _____ Age _____ Date _____

UNDER-REACTION

CORE SYNDROMES

Unforthcomingness

1 2 3 4 5 6 7 UA
1 2 3 4 5 6 UB } ... U

Withdrawal

1 2 3 4 5 WA
1 2 3 4 WB } ... W

Depression

1 2 3 4 5 DA
1 2 3 4 5 DB } ... D

ASSOCIATED GROUPING

Non-Syndromic Under-Reaction

1 2 3 4 5 RA
1 2 3 4 RB } ... UR

OVER-REACTION

CORE SYNDROMES

Inconsequence

1 2 3 4 5 6 7 QA
Distractible : Impulsive

1 2 3 4 5 6 7 8 QB
Hyperactive : Showing off

1 2 3 4 5 6 7 QC
Attention-seeking } ... Q

Hostility

1 2 3 4 5 6 7 8 HA
Moody, sullen

1 2 3 4 5 HB
Provocative

1 2 3 4 HC
Aggressive } ... H

ASSOCIATED GROUPINGS

Peer-Maladaptiveness

1 2 3 4 5 6 7 PA
Aggressive : Domineering

1 2 3 4 5 PB
Lack of control : Unpopular } ... PM

Non-Syndromic Over-Reaction

1 2 3 4 5 6 VA
Delinquency : Peer group deviance

1 2 3 4 5 6 VB
Defiance of social norms } ... OV

Under-Reaction
Total: U + W + D + UR _____

Over-Reaction
Total: Q + H + PM + OV _____

NEUROLOGICAL

1 2 3 4 5 6 .... N

Learning disability	Social disadvantage	Bad health	Physical defect
B	E		

The above are not scored. Write in for the record.

STRUCTURAL SUMMARY BLANK

Developed by John E. Exner, Jr. for use with

THE RORSCHACH: A COMPREHENSIVE SYSTEM

I. SUBJECT DATA

Date: .....

1. Name: ..... 2. Age: ..... 3. Sex: ..... 4. Race: .....

5. Date of Birth: ..... 6. Place of Birth: .....

7. Marital Status:

Single ..... Engaged .....
Married ..... Yrs .....
Divorced ..... Yrs .....
Widowed ..... Yrs .....

7a. If married, divorced or widowed:

Age & occupation of Spouse .....
Sex & ages of Children .....

8. Father: Mother: Siblings:

Age ..... Age ..... Sex Age Occupation
Occupation ..... Occupation ..... Sex Age
Deceased ..... Deceased ..... Sex Age
Sex Age

9. Current Employment: .....

How Long? .....

11. Education Completed:

0-8 Yrs. 9-12 Yrs. H.S. Grad.
13-15 Yrs. B.A. Degree Grad. Degree

10. Prior Employments: .....

II. REFERRAL DATA

1. Purpose:

Psychiatric .....
Forensic .....
Educational .....
Other .....

1a. If Psychiatric:

Admission .....
Progress .....
Discharge .....
After Care .....

1b. If Psychiatric:

In patient .....
Out patient .....
Day Care .....

2. What is the referral question? .....

3. What is the presenting problem? .....

III. TESTING SITUATION

1. Seating:

Side by side .....
Face to face .....
Other .....

2. Cooperation:

Excellent .....
Adequate .....
Reluctant .....
Resistant .....

3. Other Tests Administered:

.....

IV. REMARKS:

SEQUENCE OF SCORES

CARD NO.	LOCATION	DETERMINANTS (S)	CONTENT (S)	POP	Z SCORE	SPECIAL

R = Zf = ZSum = P = (2) =

Location Features

W =
D =
Dd =
S =
DW =

Determinants (Blends First)

M =
FM =
m =
C =
Cn =
CF =
FC =
C' =
C' F =
FC' =
T =
TF =
FT =
V =
VF =
FV =
Y =
YF =
FY =
rF =
Fr =
FD =
F =

Contents

H = Bl =
(H) = Bt =
Hd = Cg =
(Hd) = Cl =
A = Ex =
(A) = Fl =
Ad = Fd =
(Ad) = Ge =
Ab = Hh =
Al = Ls =
An = Na =
Art = Sc =
Ay = Sx =
Xy =

Contents (Idiographic)

..... =
..... =
..... =
..... =
..... =
..... =
..... =

DQ

+ =
o =
v =
— =

M Quality

+ =
o =
w =
— =
NO FORM =

Form Quality

FQx

+ =
o =
w =
— =
NO FORM =

FQf

+ =
o =
w =
— =

S-CONSTELLATION (Adult)

....FV+VF+V+FD > 2
....Col-Shd Bl > 0
....3r+(2)/R < .30
....Zd > ± 3.5
....ep > EA
....CF+C > FC
....X+% < .70
....S > 3
....P < 3 or > 8
....H < 2
....R < 17
.....TOTAL

Special Scorings

DV =
INCOM =
FABCOM =
ALOG =
CONTAM =
.... WSUM5 =
AG =
CP =
MOR =
PER =
PSV =
=

RATIOS, PERCENTAGES, AND DERIVATIONS

ZSum-Zest =
Zd =

EB = EA =
eb = ep = D =

(FM= m= T= C'= V= Y=)

a:p = S-Con =
Ma:Mp = Depi =
D (Tot-Str) = Sczi =

FC:CF+C =
Pure C =
Afr =
3r+(2)/R =
L =
Blends:R =
X+% =
F+% =

W:M =
W:D =
A% =
Cont:R =
Isolate: R =
H+Hd:A+Ad = (H)+(Hd) (A)+(Ad) =
H+A:Hd+Ad =

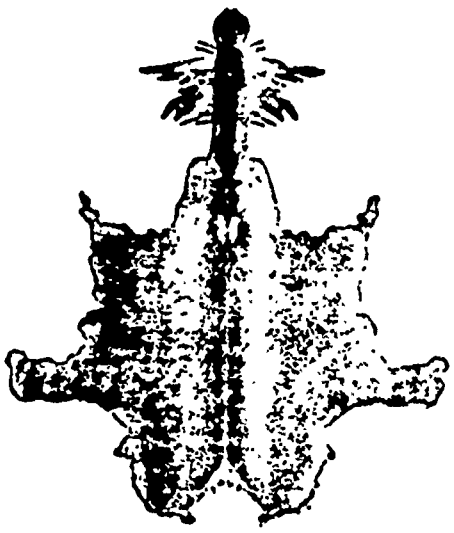
I

II

III

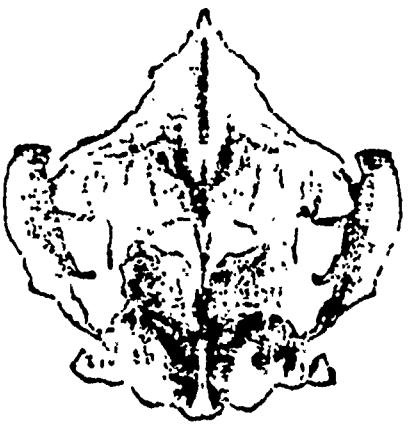
IV

V



VI

VII



VIII

IX

X

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Appendix E

Content Categories and Scoring Examples

H Human: person, somebody

Hd Human detail: hand, arm, somebody's face

(H) Distanciated Human (fictional or mythical): statue, angel, witch, superman

(Hm) Monster (without animal characteristics): ghost, giant, monster

(Hd) Distanciated Human Detail: head of the devil, Batman's hands

Animal-unspecified: no further description offered

Sea animal: unspecified

FARCON animal: half crab-half bird, half fly-half spider, bear with duck head

Insect: bug, butterfly, ants, roach, spider

Reptiles/Amphibians: frog, snake, turtle, lizard, alligator

Rodent: mouse, squirrel, bat, rat

Bird: duck, goose, birds

Large Mammals: deer, tiger, elephant, hippo, bear, seal, giraffe, buffalo

Small Mammal: weasel, fox, rabbit, wolf, beaver, raccoon, bear cub

Primate: monkey, chimp, gorilla, ape

Domestic/farm animal: cow, chicken, sheep, goat, dog, cat, pig, horse

Shellfish: snail, oyster, lobster, clam, crab

Fish: shark, catfish, guppies

Other Sea Creatures: seahorse, starfish, octopus, eel, stingray

Ad Animal detail: paw, bear's head, pig's tail

(A) Cartoon: animal cartoon characters: Bugs bunny, Daffy duck, Yogi bear

(A) Prehistoric, Extinct, Fantasy Animal: dinosaur, dragon, unicorn, sea serpent

(A) Creature-monster with animal characteristics: claws, paws, tail, fur

(A) Distanciated Animal-other: statue of a cat

(Ad) Distanciated Animal detail: incomplete animal form of cartoon chacter, creature, prehistoric animal, etc.

Aobj Animal Object: spider web, sea shell, animal pelt, feather, nest, horseshoe, wishbone

A/H Animal/human combination: hewman, minotaur

Plants: tree, flower, bush, garden, grass, stick, stump, leaf, forest, jungle

Water: rain, water, ocean, sea, snow, puddle, steam, iceberg, fountain

Land Formations: island, land, earth, cave, canyon, mountain, beach, hole, rock

Celestial Bodies: star, sun, moon, planet, meteor

Light: beam, ray, sunrise, sun burst, sunset, rainbow

Natural Phenomena: geiser, volcano, eruption

Man Made Structure: tunnel, bridge, tower, wall, house, hut, castle

Weapons/Battle Implements: army tank, gun, bullet, boomerang, slingshot, spear, starwars weapon

Appendix E

Transportation-means and modes: missile, rocket, plane, parachute, spacecraft, runway, street, road, rocket base, motorcycle, ship

Tools-building materials: torch, wirecutters, chain, saw, nail, brick, glass, pipes, pole, ladder

Furniture, household objects: mat, bannister, lantern, stove, hanger, needle, inkwell, headboard, chair, string, vase, ornament, planter

Artwork: statue, picture, painting, decoration, design

Colors, ink, paint: pretty colors, red and black paint, inkspots

Shapes, letters: letter U, circle, spots, heart

Recreation, Music, Leisure: sandbox, kite, game, drums, ball, guitar

Modern, futuristic phenomena: nuclear meltdown, spaceship, laser, computer

Non-clothing attire: goggles, mask, wig, badge, necklace

Non-food consumptive: cigarette, liquor

Objects of worship: cross, religious references, totem pole, tombstone, flag

Abstractions: heaven, roots of the devil, key to your heart, spirits, love

Human groups: party, big fight, group home

Anatomy, body: skeleton, bones, ribs

Anatomy, visceral: lungs, heart, insides of someone's body

Blood

Cloud

Clothing

Fire

Smoke

Explosion

Food

X-ray

Sex

Map

Misc. other

Kappa coefficient for agreement between two independent raters = .90 for Categories plants through human groups

Kappa for categories Animal unspecified through A/H = .94

Appendix F

Frequencies and Percents[1] of Referral Reason by Position

Referral Reason	Position 1 N	1 %	2 N	2 %	3 N	3 %	4 N	4 %	5 N	5 %	Total N	Total %R
School Failure	29	18	12	7	2	1	3	2	2	1	48	14
Developmental Delay, Learning Disability	28	17	10	6	2	1	0	0	0	0	40	12
School Problems/Classroom Adjustment	22	14	9	6	11	7	3	2	0	0	45	13
Needs Special Program	18	11	12	7	2	1	0	0	1	1	33	10
Hyperactivity, Problems with Attention Concentration	13	8	12	7	7	4	3	2	1	1	36	10
Acting Out Behavior	10	6	9	6	7	4	2	1	1	1	28	8
Emotional-General	9	6	17	10	5	3	2	1	0	0	33	10
Delinquent Behavior	8	5	6	4	2	1	2	1	0	0	18	5
Peer Problems/Social Adjustment	5	3	6	4	6	4	6	4	0	0	23	7
School Refusal	5	3	2	1	2	1	1	1	0	0	10	3
Neurological/Organic-Medical	3	2	5	3	1	1	1	1	0	0	10	3
Court Commitment	2	1	0	0	0	0	0	0	0	0	2	1
Motor Problems	2	1	1	1	2	1	1	1	0	0	6	2
Family Problem	1	1	1	1	1	1	0	0	0	0	3	1
Withdrawn Behavior	0	0	4	2	3	2	1	1	0	0	8	2
None	7	4	56	35	109	67	137	85	157	97	46	6
Total	155	96	106	65	53	33	25	15	5	33	344	

[1]Percents are of total number of subjects, 162, except in final column where the percent reflects percent of referral reasons, using total number (344) as denominator.

Note: Coefficient of agreement for two independent raters, Kappa = .85, $p \leq .001$.

Appendix G

Frequencies and Percents of Diagnostic Categories

with Incorporated DSM-III Codes by Position

Diagnostic Category	DSM-III Codes	Position 1 N	1 %	1 %Dx1	Position 2 N	2 %	2 %Dx2	Total N%	Total %D.
Disorders Re: Organic Brain Damage	310.1, 310.8, 319	34	21	30	4	2	9	38	24
Socialized Conduct Disorder, Aggressive Type	312.23	13	8	11	2	1	4	15	9
Undersocialized Conduct Disorder, Aggressive Type	312.0	10	6	9	1	1	2	11	7
Overanxious Disorder	313.0	9	6	8	0	0	0	9	6
Personality Disorders	301.1, 301.6, 301.7, 301.8, 301.83	7	4	6	4	2	9	11	7
Attention Deficit Disorder With Hyperactivity	314.01	6	4	5	5	3	11	11	7
Neurotic Disorders	300.02, 300.2, 300.4	5	3	4	2	1	4	7	4
Adjustment Disorders	309.2, 309.21, 309.4, 308.83, 309.9	4	2	4	2	1	4	6	4
Other Specific Learning Difficulty Developmental Delay	315.2, 315.5, 318	4	2	4	16	10	35	20	13
Attention Deficit Disorder Without Hyperactivity	314.01	3	2	3	2	1	4	5	3
Identity Disorder, Oppositional Disorder	313.81, 313.82	3	2	3	0	0	0	3	2
Social Withdrawal	313.21, 313.22, 313.23	3	2	3	1	1	2	4	2
Other Specified Conduct Disorder	312.8	2	1	2	1	1	2	3	2
Impulse Control Disorder	312.30, 312.34	2	1	2	1	1	2	3	2
Socialized Conduct Disorder, Nonaggr. Type	312.21	2	1	2	2	1	4	4	2
Tic, Siezure Disorder	307.2, 320	2	1	2	1	1	2	3	2
Childhood Psychosis	299.8, 299.9	1	1	1	1	1	2	2	1
Psychosexual Identity Disorder	302.6	1	1	1	0	0	0	1	1
Undersocialized Conduct Disorder, Nonaggr. Type	312.21	1	1	1	0	0	0	1	1
Mixed Disturbance of Conduct and Emotion	312.4	1	1	1	0	0	0	1	1
Mental Retardation	317	1	1	1	1	1	4	2	1
None		48	30		116	72			
Total		114	70		46	28		160	

Note: Coefficient of agreement between independent raters, Kappa = .85, $p < .001$.

Appendix H

Frequencies and Percents of Diagnostic Concomitants by Position

Diagnostic Concomitants	Position 1 N	1 %	1 %Dx1	Position 2 N	2 %	2 %Dx2	Total N	Total %
With Emotional Disturbance	17	11	39	1	1	1	18	35
With Mixed General Learning Disability	6	4	14	0	0	0	6	12
With Acting Out	3	2	7	0	0	0	3	6
With Anxiety	2	1	5	2	1	22	2	4
With Depressed Mood	2	1	5	0	0	0	2	4
With General Developmental Disability	2	1	5	2	1	22	4	8
With Minimal Brain Dysfunction, Brain Injured	2	1	5	0	0	0	2	4
With Other Physical Conditions	2	1	5	0	0	0	2	4
With Immaturity	1	1	2	1	1	11	2	4
With Language Problem	1	1	2	1	1	11	2	4
With Mental Retardation	1	1	2	0	0	0	1	2
With Poor School Adjustment	1	1	2	1	1	11	2	4
With Poor Social Adjustment	1	1	2	0	0	0	1	2
With Reading Problem	1	1	2	0	0	0	1	2
With Visual-Perceptual Problems	1	1	2	0	0	0	1	2
With Problems With Aggression	0	0	0	1	1	11	1	2
Psychotic	0	0	0	0	0	0	0	0
None	119	73%		153	94%			
	43	27%		9	6%		52	

Note: Coefficient of agreement between independent raters, Kappa = .82, $p < .001$.

Appendix I

Frequencies and Percents[1] for Background Information by Position

Background Item	Position 1 N	1 %	2 N	2 %	3 N	3 %	Total %	Total %BK
Adopted	9	6	2	1	0	0	11	14
Other Medical Problems	8	5	0	0	1	1	9	12
Seizure Disorders	7	4	1	1	2	1	10	13
Heart Problems	5	3	2	1	0	0	7	9
Auditory Problems	4	3	1	1	0	0	5	6
Medical Syndromes	4	2	3	2	0	0	7	9
Accused of Assault	3	2	1	1	0	0	4	5
Accused of Theft	3	2	0	0	1	1	4	5
Deprivation, Abuse Neglect	3	2	2	1	0	0	5	6
Other Delinquent Acts	3	2	2	1	0	0	5	6
Cerebral Dysfunction	2	1	1	1	0	0	3	4
Prematurity	2	1	0	0	0	0	2	2
Suicidal Gestures	1	1	0	0	0	0	1	1
Visual Problems	1	1	1	1	1	1	3	4
Drug Use	0	0	1	1	0	0	1	1
Homosexual Gestures	0	0	1	1	0	0	1	1
None	107	66	144	89	157	97		
Total	55	34	18	11	5	3	78	

[1]Percents are of total number of subjects, 162, except in Total column, where percent reflects percent of background items.

Note: Coefficent of agreement between two independent raters, Kappa = 0.86, $p < .001$.

Appendix J

BSAG Items Not Included in Five-Factor Structure

Item	Frequency N	Frequency %	Skewness	Kurtosis
Underreaction				
Withdrawal-Avoids contact with other children*	6	4	0.28	12.12
Depression-Unmotivated, has no energy	18	11	0.95	3.77
-Always sluggish, sometimes lethargic*	7	4	0.48	10.82
Non-Syndromic Under-Reaction-Is too unaware of people to greet*	5	3	0.00	13.66
-Lacks confidence to try difficult tasks	35	22	0.62	0.53
-Shrinks from active play*	4	2	-0.40	15.49
-Has own solitary activity to revert to	20	13	0.93	3.15
-Sometimes wanders off alone	35	22	0.62	0.53
Over-Reaction				
Hostility-Resentful muttering in response to correction	63	40	-0.01	- 0.87
Peer Maladaptiveness-Can never keep a friend for long, tries to pal up with newcomers	13	8	0.93	5.94
Non-Syndromic Over-Reaction-Mixes mostly with unsettled types	23	15	0.88	2.38
-Not restless, but only works when watched	29	18	0.76	1.27
-Has truanted once or twice, often suspected of truancy	12	8	0.91	6.52
-Slumps, lolls about at desk	19	12	0.94	3.44
Neurological				
-Makes aimless movements with hands*	7	4	0.48	10.82
-Has unwilled twiches, jerks*	4	2	-0.40	15.49
-Bites nails badly*	7	4	0.48	10.82

*Items excluded from factor analyses because of low frequencies. N=157

Appendix K

Types of Rorschach Response Rejection, Frequencies and Percents

Rejection Type	F	% Subjects	% Rejections
General	20	12	71
Response offered in Inquiry	6	4	21
Popular offered in Inquiry	2	1	8
Near Popular offered in Inquiry	0	0	0

N = 162

Appendix L

Types of Rorschach Response Additions, Frequencies and Percents

Type of Addition	F	% Subjects	% Additions
General	23	14	66
Popular	10	6	28
Near Popular	1	1	3
More than one general response offered	1	1	3

N = 162

Appendix M

Types of Rorschach Response Changes, Frequencies and Percents

Type of Change	F	% Subjects	% Additions
Content changed	18	11	38
Response denied or rejected in inquiry	15	9	32
Popular changed to another Popular	5	3	11
General response changed to popular	2	1	4
Near popular changed to Popular	2	1	4
Popular denied or rejected in inquiry	2	1	4
General response changed to Near popular	1	1	2
Near popular changed to another Near popular	1	1	2
Popular changed to Near Popular	1	1	2
Popular changed to general response	0	0	0

N = 162

Appendix N

Frequency and Distribution of Rorschach Special Scores

Special Scores	$\bar{X}$	SD	Range	Frequency	Skewness	Kurtosis	Freq = 0 N(%)	Freq ⩾ 1 N(%)	*Adj. $\bar{X}$
Personal	0.71	1.5	0-12	115	3.93	22.45	107(66)	55(34)	(2.1)
(PER)	0.03	0.2	0-1	4	6.18	36.68	158(97)	4(3)	(1.0)
Perseveration	0.12	0.5	0-4	20	5.13	32.55	148(91)	14(9)	(1.4)
(PSV)	0.17	0.5	0-3	28	3.14	11.32	139(86)	23(14)	(1.2)
Deviant Verbalization	0.39	1.1	0-9	63	5.54	38.24	125(77)	37(23)	(1.7)
(DV)	0.11	0.3	0-2	17	3.47	12.40	147(91)	15(9)	(1.1)
Incongruous Combinations	0.22	0.6	0-4	36	3.58	15.65	135(83)	27(17)	(1.3)
(INCOM)	0.10	0.4	0-3	16	5.21	30.06	151(93)	11(7)	(1.4)
Fabulized Combinations	0.17	0.5	0-4	28	4.08	22.25	140(86)	22(14)	(1.3)
(FABCOM)	0.04	0.2	0-1	6	4.95	22.77	156(96)	6(4)	(1.0)
Contamination	0.04	0.2	0-2	6	6.59	47.46	157(97)	5(3)	(1.2)
(CONTAM)	0.03	0.2	0-2	5	7.43	59.99	158(98)	4(2)	(1.2)
Autustic Logic	0.24	0.7	0-4	39	3.63	14.89	136(84)	26(16)	(1.5)
(ALOG)	0.05	0.2	0-1	8	4.20	15.82	154(95)	8(5)	(1.0)
Television, movie, media	0.40	0.8	0-4	65	2.28	5.50	116(72)	46(28)	(1.4)
(TV)	0.03	0.2	0-1	4	6.18	36.68	158(98)	4(2)	(1.0)
Transparency	0.06	0.4	0-4	9	8.57	82.35	157(97)	5(3)	(1.8)
(TRANS)	0.01	0.1	0-1	2	8.92	78.45	160(99)	2(1)	(1.0)
Critical	0.12	0.5	0-4	20	5.10	29.46	150(93)	12(7)	(1.7)
(CRIT)	0	0					0	0	

*Using N Freq ⩾ 1 as denominator, expression of average frequency among those who exhibited special score.

Appendix B

Frequencies and Measures of Central Tendency for 99 Rorschach Determinants

Determinants	M	SD	Range	F	Skewness	Kurtosis	F = 0		F > 1		Adjusted *
							0	%	0	%	%
M^a human movement active	1.07	1.36	0-7	173	1.67	3.54	69	43	93	57	1.66
M^p human movement passive	0.66	1.01	0-5	107	1.93	4.25	96	59	66	41	1.62
M^b human movement blocked	0.25	0.66	0-6	40	4.94	36.86	132	81	30	19	1.32
$M^{a/p}$ human movement combined active/passive	0.11	0.37	0-3	18	3.54	12.73	147	91	15	9	1.36
$M^{a/b}$ human movement combined active/blocked	0.14	0.58	0-6	22	7.34	66.36	147	91	15	0	1.47
$M^{p/b}$ human movement combined passive/blocked	0.09	0.29	0-1	15	2.84	6.13	147	91	15	0	1.00
FM^a animal movement active	1.29	1.36	0-7	209	1.28	1.75	55	34	107	66	1.95
FM^p animal movement passive	0.63	1.02	0-6	106	2.17	3.99	95	59	67	41	1.58
FM^b animal movement blocked	0.84	1.19	0-10	136	3.36	21.15	80	49	82	51	1.66
$FM^{a/p}$ animal movement combined active/passive	0.09	0.36	0-1	14	2.97	6.91	148	91	14	0	1.00
$FM^{a/b}$ animal movement combined active/blocked	0.10	0.32	0-2	17	3.13	8.65	146	90	16	16	1.00
$FM^{p/b}$ animal movement combined passive/blocked	0.00	0.31	0-3	10	8.62	53.62	154	95	0	5	1.15
m^a inanimate movement active	0.72	1.09	0-5	117	1.76	2.92	95	59	67	41	1.73
m^p inanimate movement passive	0.34	0.58	0-2	39	1.96	3.12	128	79	34	21	1.15
m^b inanimate movement blocked	0.22	0.65	0-4	53	2.47	7.74	121	75	41	25	2.12
$m^{a/p}$ inanimate movement combined active/passive*				7							
$m^{a/b}$ inanimate movement combined active/blocked	0.09	0.36	0-2	14	13.56	3.63	149	92	13	0	1.00
$m^{p/b}$ inanimate movement combined passive/blocked*				3							
Cpoo Pure color-life sustaining	0.17	0.44	0-2	27	2.67	6.73	139	86	23	14	1.17
Cneg Pure color-life destructive	0.19	0.45	0-2	31	2.36	5.02	133	83	27	17	1.15
CFpoo Color dominated form-life sustaining	0.68	1.01	0-6	111	1.85	6.66	94	58	66	42	1.63
CFneg Color dominated form-life destructive	0.46	0.75	0-4	74	1.90	4.09	107	66	33	34	1.34
FCpoo Form dominated color-life sustaining	0.49	0.81	0-5	80	2.22	7.78	103	64	39	36	1.36
FCneg Form dominated color-life destructive	0.09	0.31	0-2	15	3.44	12.07	148	91	14	9	1.07
Csym poo Symbolic color-life sustaining				2							
Csym neg Symbolic color-life destructive				1							
Cn Color Naming*				5							
CP Color projection	0.05	0.23	0-1	8	4.28	15.82	154	95	8	5	1.00
C'b Pure black*	0.07	0.29	0-2	12	4.96	17.47	151	93	11	7	1.09
C'w Pure white*				1							
C'g Pure gray*				0							
C'b/g Pure black and gray combined				1							
C'Fb Black dominated form	0.12	0.44	0-4	19	5.56	40.67	147	91	15	9	1.27
C'Fw White dominated form	0.05	0.23	0-1	8	4.28	15.82	154	95	8	5	1.00
C'F Gray dominated form*				3							
C'Fb/w Black and white dominated form*				3							
C'Fb/g Black and gray dominated form*				1							
FC'b Form dominated black	0.40	0.88	0-4	65	2.69	5.82	125	77	37	23	1.76
FC'w Form dominated white	0.09	0.33	0-2	15	9.10	96.22	153	94	9	6	1.67
FC'g Form dominated gray	0.08	0.22	0-1	8	4.28	15.82	154	95	8	5	1.00
FC'b/w Form dominated black and white	0.05	0.34	0-2	8	5.42	22.84	155	96	7	4	1.14
FC'g/w Form dominated gray and white*				2							
T Pure shading texture				0							
TF Shading texture dominated form	0.05	0.27	0-2	6	5.93	36.93	156	96	6	4	1.33
FT Form dominated shading texture	0.15	0.48	0-3	25	3.82	16.36	143	88	19	12	1.32
V Pure Vista*				1							
VF Vista dominated form	0.06	0.42	0-5	9	10.49	130.57	157	97	3	3	1.00
FV Form dominated vista*				4							
Y Diffuse shading*				0							
YF Diffuse shading dominated form	0.37	0.88	0-7	124	3.96	23.88	124	76	38	24	3.26
FY Form dominated diffuse shading	0.44	0.85	0-5	72	2.60	8.60	115	71	47	29	1.33
Tn Pure texture*				0							
TnF Texture dominated form	0.14	0.36	0-2	22	2.54	5.76	141	87	21	13	1.05
FTn Form dominated texture	0.31	0.60	0-4	50	2.67	10.21	120	74	42	26	1.19
rF Reflection, form secondary*				6							
Fr Reflection, form primary	0.10	0.39	0-3	16	4.73	3.79	150	93	12	7	1.33
FD Form dimensionality	0.24	0.59	0-4	39	3.43	15.03	131	81	31	19	1.26
F Pure form	9.67	5.11	0-33	1470	1.07	2.12	3	1	160	99	9.19

*Determinants excluded from from factor analysis due to low frequency

*Computed by dividing frequency by number of students with score > 1.

Appendix F

Frequencies and Measures of Central Tendency for Exemplar Concepts

Concept	Σ	SD	Range	Frequency	Minimum	Maximum	F=0 S	F=0 Σ	F>1 S	F>1 Σ	Attrib
Σ	2.05	2.15	0-16	266	2.33	10.99	44	10	116	72	2.76
SD	0.34	1.10	0-6	110	2.22	5.40	97	66	69	40	1.60
(Σ)	0.40	0.71	0-4	68	2.00	4.38	116	78	46	28	1.28
Number (Σ)	0.66	1.25	0-9	169	3.47	16.38	78	46	96	52	1.54
(SD)	0.31	0.58	0-3	30	4.11	22.34	146	90	27	18	1.12
A-Unspecified	0.37	0.72	0-4	68	7.68	8.51	117	72	46	28	1.33
Non animal/general*				5							
Shellfish	0.37	0.87	0-6	98	1.58	2.88	100	62	62	38	1.30
Flea	0.10	0.40	0-4	17	4.38	23.88	140	98	13	6	1.14
Human animal*				7							
Insects	3.38	2.76	0-13	366	1.16	1.71	15	9	148	91	3.78
Reptiles, Amphibians	0.38	1.09	0-5	54	2.16	5.26	130	72	44	27	1.23
Rodents	1.28	1.68	0-5	200	0.73	0.41	28	26	100	76	1.78
Birds	0.76	1.68	0-6	125	2.68	5.38	85	52	77	46	1.68
Large animals	0.91	1.99	0-9	147	1.35	2.02	72	44	98	56	1.63
Small animals	0.56	0.85	0-4	91	1.72	3.07	99	61	68	32	1.44
Primates	0.11	1.99	0-8	28	3.32	11.24	146	88	16	28	1.12
Domestic/farm animals	0.88	1.99	0-7	134	2.32	6.22	86	52	76	42	1.76
Non animals-other	0.32	0.68	0-3	51	2.12	4.32	128	75	46	26	1.28
All	0.68	1.99	0-6	166	1.76	2.84	88	38	72	46	2.88
Carcass (A)	0.06	0.28	0-2	9	4.99	27.86	156	98	6	5	1.12
Creature (A)	0.16	0.46	0-2	31	2.26	5.02	138	83	27	17	1.15
Prehistoric, Extinct (A)	0.23	0.42	0-2	38	1.98	2.86	128	79	36	22	1.12
(A) other	0.06	0.23	0-1	9	3.98	13.31	153	96	9	6	1.00
(An)	0.07	0.28	0-2	13	4.06	17.47	151	98	11	7	1.08
Anatomy,Army	0.22	0.34	0-2	36	2.86	9.43	130	82	38	28	1.24
Anatomy, +Animal	0.29	0.63	0-4	46	2.82	9.68	120	68	38	28	1.26
Blood	0.25	0.52	0-2	41	1.96	2.86	127	78	38	22	1.17
Cloud	0.16	0.48	0-2	25	2.68	6.32	139	86	28	14	1.13
Clothing	0.40	0.82	0-3	79	1.88	1.99	130	68	52	32	1.52
Explosion	0.25	0.54	0-4	28	2.76	8.46	136	82	34	19	1.28
Food	0.39	0.96	0-4	47	2.56	6.82	132	75	40	25	1.16
Flow	0.32	0.68	0-4	32	2.56	7.46	128	77	37	23	1.40
Gate	0.16	0.43	0-2	26	2.76	7.36	148	86	22	14	1.16
Plants	1.88	1.38	0-6	308	1.41	2.21	76	47	86	43	1.92
Water	0.48	0.87	0-3	77	2.15	5.32	134	78	46	28	1.44
Land formations	0.68	1.12	0-4	106	2.46	7.13	120	68	68	38	1.71
Rope	0.06	0.30	0-2	28	5.11	27.82	156	98	6	5	1.25
Celestial bodies	0.18	0.54	0-2	17	3.67	12.40	147	91	15	9	1.13
Light	0.09	0.37	0-2	15	4.97	20.68	150	90	13	7	1.28
Natural phenomena	0.15	0.44	0-2	25	3.60	13.86	141	87	25	15	1.10
Natural structures	0.16	0.60	0-2	26	2.44	5.44	138	88	26	15	1.08
Weapons, basic implements	0.17	0.68	0-4	28	3.51	14.90	130	86	23	14	1.22
Transportation	0.38	0.66	0-4	54	2.68	9.11	110	56	43	26	1.26
Tools, building materials	0.16	0.67	0-3	26	3.96	12.36	148	88	20	12	1.20
Furniture, household objects	0.32	0.66	0-3	52	2.23	2.16	122	70	46	26	1.20
Artwork	0.14	0.35	0-2	22	2.82	7.73	142	88	20	12	1.10
Colors, ink, paint	0.32	0.71	0-4	52	2.60	7.36	122	70	36	22	1.46
Shapes, lenses, designs	0.19	0.76	0-4	31	7.96	79.77	141	87	22	13	1.40
Recreation, sports, leisure	0.31	0.59	0-3	50	1.86	3.38	122	72	46	28	1.28
Manufacturing action	0.14	0.37	0-2	23	2.44	5.21	140	86	22	14	1.04
Non food consumption*				2							
Object of worship	0.20	0.52	0-2	16	3.38	16.78	147	91	15	9	1.07
Abomination	0.08	0.46	0-3	13	8.40	86.44	154	95	8	5	1.62
Nature-theoretic phenomena	0.21	0.56	0-4	34	3.65	16.72	126	86	36	16	1.31
Animal object	0.28	0.53	0-2	51	1.43	1.21	136	72	46	28	1.11
Human group				2							
A/N*				5							
Misc. other	0.14	0.43	0-2	26	2.76	7.36	140	86	22	14	1.16
Drugs*				6							
Sex*				7							

*Excluded from analyses due to low frequency

+Computed by dividing total frequency by number of subjects with F > 1, yielding mean score of those who were assigned each score.

Appendix Q

Bivariate Correlations Approaching Significance Between BSAG Factors, Rorschach Data and Background Variables

Variable	BSAG Factor I	II	III	IV	V
BSAG II	.73**				
BSAG IV			.42**		
BSAG V	.48**	.36**			
CD Fac 3	-.22*				
CD Fac 4				-.19*	
Rejections					.20*
Pos V			-.19*		
FQo	-.19*				
Age	-.20*	-.23*			
Medication				.21*	
Speech				.24*	
Physical Appearance			.24*	.25**	

* $p < .01$

** $p < .001$

Appendix R

Bivariate Correlations Approaching Significance Between Content-Determinant Factors, Other Rorschach Data and Background Variables

Variable	Content Determinant Factor						
	I	II	III	IV	V	VI	VII
CD FAC I							
CD FAC II							
CD FAC III	.24**						
CD FAC IV	.31**		.24*				
CD FAC V	.21*		.51**	.33**			
CD FAC VI	.23*		.25**		.27**		
BSAG I			-.22*				
BSAG IV				-.19*			
R	.53**	.76**	.48**	.35**	.36**	.32**	
Rej			-.20*				
Response △	.25**						
IXT	-.19*						
Pos ∧	.45**	.59**	.27**		.20*		
F <>		.33**	.32**	.32**	.23*	.32**	
Pos ∨		.36**	.37**		.24**		
Pos @∧						.30**	
W			.32**		.26**		
WS			.34**		.25**		.20*
D	.45**	.77*	.25**	.25**		.22*	
DS		.21*	.27**		.36**	.44**	
Dd	.30**	.44**	.29**	.34*			
DQ+	.63**		.60**		.45**	.29**	
DQo	.30**	.82**	.26**			.24*	
DQv			.39**	.29**	.29**		.27**
DQ-		.42**		.39**			
FQO							.75**
FQ+	.27**		.38**		.24**	.71**	
FQo	.42**	.70**	.52**	.19*	.30**	.20*	
FQv	.40**	.35**	.20*	.21*	.24**		
FQ-	.21*	.40**		.42**			
Pairs	.48**	.58**	.26**				
Popular	.30**	.23*	.33**				-.21*
Near Popular	.39**	.20*	.20*				
Zf	.42**		.58**		.49**	.31**	
Special Score	.39**	.26**		.53**			
Age			.24*				
Sex	.18*						
Fire Setting History	.36**				.19*	.37**	
Reading NCE						.18*	
General Health			.24**				
Size		.19*					

* $p < .01$

** $p < .001$

Appendix S

Bivariate Correlations Approaching Significance Between

Rorschach Factors, Contents and Determinants, and Background Variables

Variable	Rorschach Factor					
	Data Only			Total		
	I	II	III	I	II	III
R Dat II	.47**					
R Dat III	.31**					
R Tot I	.49**	.22*	.92**		.43**	.43**
R Tot II	.56**	.92**	.27**			.66**
R Tot III	.98**	.62**	.27**			
CD 1	.54**	.33**	.46**	.65**	.63**	.49**
CD 2	.75**	.44**			.35**	.82**
CD 3	.43**		.58**	.72**	.20*	.37**
CD 4	.25**	.53**		.28**	.68**	.29**
CD 5	.27**		.47**	.64**	.26**	.25**
CD 6	.24**		.28**	.42**	.20*	.22*
Fire Setting	.24*	.20*	.24*	.32**	.28**	.24*
General Health	.18*		.20*	.22*		.19*

* $p < .01$

** $p < .001$

Appendix T

Bivariate Correlations Approaching Significance Between Background and Rorschach Variables

Rorschach Variables	Background Variables			
	Age	Sex	Fire Setting	General Health
R			.26**	.22*
IRT	.30**			
Pos ∧		.28**	.20*	.28**
WS			.22*	
DS				.21*
Dd		.19*		
ɒdS		.23*		
DQ+	.22*		.31**	.22*
FQr+			.34**	.20*
FQo				.22*
Pairs			.19*	
Zf			.24*	.20*
Special			.22*	

* $p \leq .01$

** $p \leq .001$

Appendix U

Bivariate Correlations Among Background and Achievement Variables

	Reading NCE	Language NCE	Math NCE	Science NCE	Soc. Stud. NCE	IQ Class	Rdg Ach.	Arith. Ach.	Phys. App.	Gen. Health
Reading NCE	.22*	.36**	.33**	.35**	.34**					
Language NCE			.27**	.84**	.80**					
Math NCE				.30**	.37**					
Science NCE					.90**					
IQ Class	.27**		.32**		.20*					
Speech			-.19*			-.35**	.18*	.21*	.25**	
Size								.25**		.20*
Rdg. Ach.	-.18*		-.26**			-.28**		.67**		
Arith. Ach.		-.21*	-.32**	-.24**	-.23*	-.32**				

* $p < .01$

** $p < .001$