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# CLINICAL APPLICATION OF WISC SUBTESTS

by

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# Abstract

Clinical Application of WISC Subtests

by

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The purpose of this study was to evaluate the efficacy of prediction from WISC subtests to behavior.

On the basis of prior research and theory, hypotheses were formulated concerning the relationship between specified subtests and three types of criteria: (1) a general behavioral rating scale; (2) a school behavior rating form; and (3) the Michigan Picture Test Tension Index. Ss were children aged eight to thirteen, who had been placed in foster care for a minimum of 90 days.

A multiple correlation approach was used to evaluate the hypothesized relationships. Models were established between predictor and criterion variables to determine, first, the variance attributable to demographic variables (age, sex, ethnicity, socio-economic status), then, the increment in variance resulting from addition of the WISC variable. The partial correlation between WISC variable and criterion was also considered, allowing for control over the demographic variables. In addition, success of

prediction from subtests was compared with prediction from the composite IQ scores (Full Scale IQ, Verbal IQ, Performance IQ, Verbal IQ minus Performance IQ), and from factor scores.

Criteria were divided by content into three categories: intellectual behavior, emotional adjustment, and social behavior. Results were as follows:

(1) Intellectual behavior was the best predicted category. Although support was received for most of the subtest-behavior hypotheses, composite and factor scores appeared to be better predictors.

(2) Criteria concerned with emotional adjustment were generally not well predicted by either subtests, composite scores, or factor scores.

(3) Social behavior criteria were also not well predicted, although success of prediction varied with the particular criterion involved.

(4) A modified attention factor score, consisting of Digit Span plus Coding, appeared to be the best general predictor of all three categories of behavior. Inclusion of factor scores as an addition to the WISC protocol was considered on the basis of the results of this study.

(5) Prediction was successful only from scaled-score subtests; difference scores, based on deviation from each S's own verbal and performance mean scores, were not successful.

Methodological considerations suggested by prior research were discussed with regard to the results of the present study. The necessity for consideration of the type of criterion used and its manner of assessment, and need for control of ethnic and tester variables, were reaffirmed.

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# I Introduction

The successful use of the Wechsler Intelligence Scales in behavior assessment and diagnosis is, to a large extent, dependent upon the skill and experience of the clinical practitioner. Interpretations based upon test results are often subject to criticism due to their subjective mode of derivation and lack of empirical substantiation.

One major attempt at providing a less subjective basis for the clinical evaluation of intellectual test performance has been through the use of pattern or scatter analysis. Scatter may be defined as "the pattern or configuration formed by the distribution of the weighted subtest scores of an intelligence test. . . . The relationship of any two weighted subtest scores is subsumed under the concept of scatter; moreover, the relationship of any single subtest score to the central tendency of all the subtest scores--however this central tendency is determined--is also implied" (Rapaport et al., 1968, p. 75).

According to Wechsler, "the intent of 'pattern analysis' is to find a way or formula for identifying diagnostically different groups, and eventually the individuals composing them, on the basis of their differential performance on a number of tests administered as a battery" (1958, p. 63).

The development of such formulations would serve to refine the clinical use of the Wechsler scales, and increase the likelihood of a 'correct' interpretation of the test data. Attempts at deriving such 'cookbook' techniques have, however, met with limited success. The large and ever-growing body of literature concerned with empirical justification for the use of scatter, patterning, and individual subtest correlates, is replete with contradictory findings, and has raised serious questions about the usefulness of this approach.

The aim of the present study is a) to systematically evaluate the many hypothesized relationships between WISC subtests and behavior, and b) to provide evidence of the efficacy of their use in this manner.

Use of scatter in differential diagnosis

The first major body of research on patterning was developed by Rapaport et al. (1945), and dealt with the clinical significance of the Wechsler subtests and subtest scatter. Rapaport presented extensive justification, both theoretical and empirical, for the utilization of patterning in diagnosis. Wittenborn (1949), however, using Rapaport's data, found no strong evidence to support those hypotheses. Rabin (1951), in a review of research with the Wechsler-Bellevue (W-B) test, found that a reconsideration of these results by reviewers and other investigators cast considerable doubt upon the conclusiveness of Rapaport's findings. A summary of the more pertinent criticisms included the following:

1) Insufficient attention was given to variables such as age, sex, education, cultural and socio-economic status.

2) The number of Ss in each of the 19 clinical groups was too small for proper statistical comparison.

3) Scatter measures may be rough indicators of differences between groups, but are not valid or useful in individual diagnosis.

4) The intermingling of clinical observations with the data and conclusions that are to be drawn from quantification findings is confusing, and emphasizes the lack of validity of the results.

Rabin concluded that the study failed to produce conclusive findings concerning scatter, and that "the efficacy of W-B scatter in individual or differential diagnosis has not been demonstrated (1951, p. 229).

Warner (1950), comparing a group of anxiety neurotics with a group of normals, found that neither Verbal IQ minus Performance IQ, relative Digit Span, nor relative Arithmetic score allowed for an effective differentiation between the two groups. Kogan (1950) surveyed the literature on patterning, and concluded that the heterogeneity of findings could probably be attributed to differences in methodology, controls, and diagnostic categories. He therefore attempted to control the relevant variables, using two groups of Ss, neurotic and schizophrenic, matched for age, IQ, and education. Subtest scores were converted into deviations from each S's own mean. He found that Ss having greater agreement in total Wechsler pattern were no more likely to agree in diagnosis than those with lesser pattern agreement, and concluded that the use of W-B patterns in the differential diagnosis of neurotics and schizophrenics was not supported.

Wittenborn & Holzberg (1961) found no useful differences in W-B subtest performance among patients diagnosed as paranoid schizophrenic, manic-depressive, or alcohol psychosis, but found a moderate though insignificant relationship between syndrome scores and subtests. They concluded that for research purposes, the use of rating scales may be more profitable than psychiatrists' diagnoses.

A similar conclusion was reached by Schofield (1952), who found a striking lack of concern for the diagnostic criteria used in patterning studies, such as disregard for severity or duration of illness in a schizophrenic sample.

Cohen (1955) submitted profiles of 300 male veterans diagnosed as psychoneurotic, schizophrenic or brain-damaged to seven clinical psychologists. Only one clinician diagnosed a significant number correctly. Cohen concluded that although there was some nonchance relationship between W-B patterns and diagnosis, it was detectable for only some clinicians, and then only to so small a degree as to be of little practical utility.

A more recent study (Holmes, 1968), comparing the records of 333 male VA patients of different diagnostic categories also failed to support the use of subtest scatter in differential diagnosis. However, Davis et al. (1971) were able to correctly categorize 29 of 35 Ss as either acutely brain injured or personality disorder, using the sequential application of WAIS Information minus Block Design, and Information minus Object Assembly as criteria.

On the basis of the above, it appears that scatter analysis has generally not been found useful in differential diagnosis.

Verbal IQ minus Performance IQ (VIQ-PIQ) Discrepancy

The VIQ-PIQ discrepancy "frequently met within Ss roughly labeled as 'acting-out' individuals" (Wechsler, 1958, p. 160) has also been utilized in differential diagnosis of psycho- or sociopathic behavior. A comparison of W-B test performances of normal and delinquent girls (Diller, 1952) verified the hypothesis of higher PIQ than VIQ, and found 'Object Assembly + Picture Arrangement greater than Block Design + Picture Completion' (also hypothesized by Wechsler (1958) as indicative of sociopathy), occurring with greater frequency in delinquents. Vane & Eisen (1954), also using a sample of delinquent and nondelinquent girls, found statistically significant differences only for Information and Digit Symbol, and hypothesized that age, socio-economic status, educational and cultural factors played a larger role in determining test performance. A thorough analysis of the W-B performance of 87 male and 80 female juvenile delinquents matched for age, grade placement, and global IQ was made by Diller (1955). Both groups obtained higher Performance than Verbal IQ scores. These findings were supported by Wiens et al. (1959) in a sample of 112 male sex offenders, by Fisher (1961) for white and Mexican-American (but not Negro) sociopaths, and by Manne et al. (1962) in a severely sociopathic population.

Foster (1959), however, testing three hypotheses (Performance IQ greater than Verbal IQ; Object Assembly + Picture Arrangement greater than Block Design + Picture

Completion; Picture Arrangement greater than other subtests) was not able to support the first hypothesis, and received only partial support for the remaining two. These, plus additional negative findings (Panton, 1962; Field, 1960) challenge the usefulness of these hypotheses.

Critique of Pattern Analysis

Despite the generally negative findings concerning the use of patterning, the search continues for a valid and dependable way to utilize subtest scores in differential diagnosis. The lack of consistency in results can be attributed either to the nature of the Wechsler scales themselves, or, more commonly, to methodological shortcomings (Frank et al., 1955; Guertin et al., 1956). Addressing himself to this problem, Guertin found that

> "in spite of the continued equivocality regarding pattern analysis faith persists in the assumption that a test of cognitive functions should be able to reveal more about a person than just his IQ. . . . The frequent occurrence of positive studies may be regarded as evidence that analysis of patterns can be meaningful and that something other than the tool itself might account for the failure of the research to provide consistent and definitive answers" (Guertin et al., 1956, p. 18).

Disregarding for the moment confounding factors such as age, sex, education, and socio-economic status (which have been controlled to some extent), two major methodological issues emerge:

1) Although much research has been directed toward patterning on the Wechsler scales, this may have been a premature effort. As recently as 1958, Wechsler maintained that finding unique combinations of subtests would have to be a piecemeal procedure, preceded by the task of discovering which test may be associated with which diagnostic syndrome. This was not considered patterning per se, but a preliminary step, necessary for discovery of which tests in combination might yield significant configurations.

2) The use of unreliable and heterogeneous psychiatric diagnoses without regard to severity or duration of illness (Schofield, 1952) has probably been a major confounding factor. Schafer, in cautioning against their use, stated that "most research into the clinical usefulness of tests has attempted to correlate test "signs" with diagnosis, and not with characteristics of thinking or behavior. These studies, when they have obtained positive results, have then tried, by reasoning rather than by experiment, to establish which personality characteristics assumed to be widespread among the members of any diagnostic group were responsible for the significantly frequent occurrence of the established "sign" or "signs". This is a fault of the statistical investigations of Diagnostic Psychological Testing. It is a roundabout method and can never yield conclusive results" (1948, p. 22, fn 4). There has been, however, a definite shift away from the use of psychiatric diagnoses to the use of more precisely defined concepts and measurements, such as anxiety and other psychometrically defined personality traits (Guertin et al., 1966).

Personality Characteristics and Subtest Performance

Investigations of the relationship between the Wechsler scales and specific personality characteristics (as opposed to psychiatric diagnoses) have been concerned largely with anxiety and performance on either a particular subtest or the Wechsler scale as a whole.

Matarazzo (1955), investigating the relationship of the Taylor Manifest Anxiety Scale (TMAS) to the W-B, found no relationship between anxiety score and any of the subtests, and concluded that if the Taylor scale measured the same thing that clinicians meant when they spoke of anxiety, the results led to a questioning of the diagnostic signs described by Wechsler and Rapaport. Jurjevich (1963) found no significant relationship between Wechsler's anxiety indices and two of the MMPI anxiety measures (A and At) in a sample of delinquent girls, with the exception of Digit Span, where a low but significant correlation was found. Calvin et al. (1955), using a college population, found a significant negative relationship between anxiety scale scores and Full Scale IQ, Verbal IQ, Information, Digit Span, Arithmetic, Vocabulary, Block Design, and Object Assembly, but methodological problems concerning combined group data make these findings somewhat equivocal.

Matarazzo and Phillips (1955) hypothesized a curvilinear relationship between Digit Symbol and anxiety, as measured by the TMAS. Using 119 Ss grouped according to anxiety score into five groups, they found that while the middle group was superior to the low anxious group, the hypothesis was not confirmed for the middle and high anxious group. A subsequent investigation of the same hypothesis (goodstein & Farber, 1957), using Ss at six levels of anxiety, found no evidence to support any general hypothesis concerning the relationship between anxiety and Digit Symbol.

No relationship between Digit Span and TMAS was found by Walker & Spence (1964), using stress and neutral instructions. However, Ss in the experimental group who reported being disturbed were inferior in Digit Span to control Ss.

Further support for the susceptibility of Digit Span to momentary stress was provided by Moldawsky & Moldawsky (1952), who used Ss previously tested on the W-B with Digit Span not deviating more than two points from their verbal mean. For experimental Ss, anxiety was deliberately evoked, and led to a lowering of Digit Span performance. Craddick & Grossman (1962), however, using visual distraction during Digit Span administration, found no difference between experimental and control group scores.

A review of the literature on Digit Span as a measure of attention (Frank, 1964) revealed that "the capacity to retain digits does not seem to be related to the degree of S's freedom from distractibility or to his span of attention with any consistency or reliability so as to be meaningful or useful" (p. 332).

To account for divergent findings concerning anxiety and subtest performance, Hodges & Spielberger (1969) proposed a dual theory of anxiety, where decrement in Digit Span is related to state anxiety (A-state), a transient emotional level, but not to trait anxiety (A-trait), a more stable personality characteristic.

With the exception of anxiety, research concerning the effects of other personality characteristics on the adult Wechsler scales has been virtually nonexistent. Wiener (1959), however, investigated the effects of distrust, as measured by the MMPI, and found that Ss' distrustful predispositions were correlated with impaired performance on the WAIS Picture Completion and Similarities subtests.

In the most recent review of research with the Wechsler scales, Guertin concluded that "too few studies were conducted to test the psychological rationale proposed for the individual subtests. . . . Much more work would seem to be needed to assess the validity of the assumptions underlying performance on the subtests, upon which interpretation of performance is based " (Guertin et al., 1966, p. 395).

## The Wechsler Intelligence Scale for Children

Throughout the body of literature reviewed thus far, the W-B and the WAIS have been considered interchangeable as far as the diagnostic-behavior-scatter relationships were concerned. This assumption of equivalence has also been extended, with questionable validity, to the clinical use of the WISC. A comparison of the WISC and the W-B by scale means, vocabulary level, and relationship of different pairs of weighted scores suggested that while for group trends similar relationships would appear, the similarity was not large enough to have predictive value in individual cases (Delattre & Cole, 1952). Because of the low comparability of several subtests, the authors advised caution in applying W-B patterns and signs to WISC data. These findings have been confirmed by Knopf et al. (1954), who also emphasized the lack of comparability between corresponding subtests of the two tests. In addition, Littell (1960), in a review of research with the WISC, noted that while Wechsler gave some hints as to what the specific subtests were supposed to measure on the adult scales, no help was given in interpreting the meaning of the WISC subtests beyond the statement that they seemed to measure different factors in children than in adults. There have been, therefore, urgings of caution in applying the results of adult research to children (Guertin et al., 1966). There is, however, a growing body of research with the WISC that parallels that using the adult Wechsler scales, and indicates that some of the adult literature may be valid for the younger population. At the very least, it provides a starting point for assessment of the WISC subtests. Findings from WAIS and W-B research have therefore been utilized in formulating the hypotheses of the present study.

WISC Patterning and Differential Diagnosis

Schoonover & Hertel (1970) compared subtest scores, VIQ-PIQ difference scores, scatter, and patterning of 351 children exhibiting a wide range of psychopathology. Nine categories, established on the basis of psychiatric description, were compared for Full Scale IQ, Verbal IQ, Performance IQ, and eleven subtest scores, using mean scaled scores for each group. No diagnostic group was completely differentiated from the others, nor was any systematic relationship found between VIQ-PIQ and diagnostic category. A study of patterning of WISC scores in males diagnosed as either sociopathic or psychopathic found that ranking of subtests demonstrated higher scores on performance than verbal subtests, while the method of extreme deviations, using Arithmetic and Picture Completion, did not contribute to a differential diagnosis (Frost, 1962). McHugh (1963), however, using a group of neurotics and a group of conduct disturbances, found no difference between the two groups when mean scores of Verbal IQ, Performance IQ, and subtests were compared.

A comparison between emotionally disturbed and brain-damaged children (Bortner & Birch, 1970), using WISC subtest scores relative to each S's own mean level of performance, found both groups lower in Comprehension, Arithmetic, Digit Span, and Digit Symbol. No significant discrepancy at any age level was found between Verbal and Performance IQs, nor were there any gross differences in patterning between

Negro and white Ss. In addition, emotionally disturbed children demonstrated stability of subtest patterning over the five year age span (7 - 11).

Verbal IQ - Performance IQ Discrepancy

As with the adult Wechsler scales, studies concerned specifically with the Verbal IQ - Performance IQ discrepancy and delinquent behavior have produced equivocal results. Fernald & Wisser (1967) found no correlation between VIQ-PIQ and degree of acting-out in a sample of 72 male juvenile delinquents, while Camp (1966), comparing VIQ-PIQ in acting-out and delinquent children with the WISC standardization population, found a significant departure for males only, with Performance IQ greater than Verbal IQ.

Personality and Behavioral Characteristics and Subtest Performance

Hafner et al. (1960) found a generally negative relationship between score on the Children's MAS and WISC performance. Significant negative correlations were found for Block Design and Digit Symbol, the performance subtests most frequently interpreted as being sensitive to anxiety. Arithmetic and Digit Span did not yield significant correlations, contrary to clinical expectations.

An investigation of the use of Digit Span as a measure of classroom distractibility, using 30 male and 30 female Ss in grades 2 - 4, produced negative results when test score was compared to a teacher rating of distractibility (Nalven & Puleo, 1968).

Krippner (1964), using a sample of 53 males ages 8 - 12, compared performance on the Comprehension and Picture Arrangement subtests with measures of social competence (SA and SQ) obtained from the Vineland Social Maturity Scale, and found a significant correlation for Comprehension, but not Picture Arrangement.

Oakland (1969), using 25 physically handicapped children rated on apathy v. achievement-orientation, found a correlation of .51 with Coding, supporting the hypothesis that Coding is an effective measure of motivation.

Blatt et al. (1965) investigated the relationship between Object Assembly and bodily concerns, to evaluate the hypothesis that concerns about body intactness and integrity would be reflected in a lowering of Object Assembly performance. WISC scores of seven children with clear clinical indications of bodily concerns were compared with WISC scores of six control group children. Both absolute differences in Object Assembly scores, and differences using the deviation from Performance and Full Scale IQ means were used. Children with bodily concerns had a lower Object Assembly score than controls, although not significant when scaled scores were used. When both S's overall mean IQ score and Performance mean IQ score were used as baselines, Object Assembly was found to be significantly lower than other subtests. No other significant differences were found.

Research Considerations with the WISC

Despite the active interest in the validation of clinical scatter hypotheses, there has been a serious lack of consistency in empirical findings. As with the adult Wechsler scales, underlying errors in methodology may account, to some extent, for the discrepancy in results. It would appear, therefore, that if any definitive conclusions are to be reached about the efficacy of interpretation from subtest data, attention must be directed to these possible sources of error.

In view of previous research, the following would appear to be important considerations:

1) Diagnostic, personality and behavioral criteria

   Because of the imprecise nature of psychiatric nosology, it appears preferable to use empirically definable behavioral and personality characteristics as criteria (Schafer, 1948; Wittenborn & Holzberg, 1951; Guertin et al., 1956).

2) Patterning and subtest analysis

   Since the clinical meaning of the individual subtests on the WISC has not yet been clearly established (Littel, 1961), and since this has been considered a necessary preliminary step in any attempt at patterning (Wechsler, 1958), research at this stage should be directed primarily at individual subtests rather than subtest configurations.

3) Scatter measures

The use of different measures of scatter may produce different results (e.g., Blatt et al., 1965). Unless groups can be equated for IQ within a very narrow range, both absolute scaled scores and scores based on deviation from S's own mean should be used.

4) Sex

There is ample evidence for sex differences in both test performance (Holowinsky & Pascale, 1971; Vane & Eisen, 1954; Guertin et al., 1956) and in its clinical interpretation (Jastak, 1953; Camp, 1966; Lessing, 1970). This variable should, therefore, be accounted for in data analysis.

5) Age

Age has been relatively unexplored in regard to its effects on WISC performance. The use of scaled scores should help equalize age differences, and Bortner & Birch's finding (1970) of stability in patterning over a 7 to 11 age range tends to support this assumption. However, factor analytic studies (e.g., Cohen, 1955) suggest that the test is structured somewhat differently at the lower age ranges, where, in addition, reliability tends to be poor (Wechsler, 1949). Inclusion of very young Ss might, therefore, result in a confounding of results.

6) Ethnicity and Social Class

The effects of ethnicity and social class have been considered both separately and in combination.

Social Class. Lessing (1970) found no difference in WISC subtest performance in children with absent fathers between different social class groups; Estes (1957) found that SES affected differences in magnitude of scores, but not patterning; Seashore (1951) found intragroup discrepancies of more importance than intergroup differences in a comparison of VIQ-PIQ in children from different occupational backgrounds.

Ethnicity. Altus (1953), comparing bilingual Mexican and unilingual non-Mexican children found highly significant differences in Verbal IQ between the two groups; Fisher (1961) found Performance IQ greater than Verbal IQ in white and Mexican-American, but not Negro, sociopaths; Bortner & Birch (1970) found no Negro-white differences in subtest patterning; and Holowinsky & Pascal (1971) found no differences between Negro and white children on subtests, with the exception of Vocabulary.

Social class and ethnicity. Lesser et al. (1955), investigating patterns of mental abilities in children from different social class and cultural backgrounds, found that differences in ethnic group produced significant differences in both absolute level of each mental ability and their patterning. Social class and ethnicity interacted to affect the absolute level of each mental ability but not the patterns. These findings were not supported by Burnes (1970), who, using a Negro and white sample, found no evidence in favor of patterns of abilities within cultural-racial groups, or by Livermore (1970), who, comparing Spanish and non-Spanish white children, found that middle class children from both groups scored higher than lower class children on each WISC measure.

Because of the lack of agreement of research on these dimensions, a consideration of both social class and ethnicity would seem advisable.

The General Hypotheses

The rationale behind the specific hypotheses to be tested derives from both theoretical and empirical sources, and is presented in two parts: a theoretical analysis of the meaning of each subtest, and a summary of research on the subtest correlates of specific behaviors.[1]

Theoretical analysis. The most concise analyses of the meaning of the individual subtests are those presented by Rapaport et al. (1968), using the W-B, and Glasser & Zimmerman (1967), using the WISC. The following represents a summary of their analyses:

Information. Rapaport et al. (1968) found Information score dependent upon educational environment and strength of the motivational function to acquire such information. Glasser & Zimmerman (1967) believed it to be a measure of how much information S had abstracted from his surrounding environment, and found it second only to Vocabulary in measuring general intelligence. They felt that children from culturally deprived environments might be penalized on this subtest. High scores were felt to represent good memory, enriched background, alertness and interest in the environment. Low scores might reflect an orientation toward non-achievement, and hostility toward scholastic achievement.

Comprehension. Rapaport et al. (1968) related performance on this subtest to judgment, believing a disparity of Information and Comprehension to be indicative of

[1]The Aritemetic subtest has been omitted from consideration, as it had not been administered to Ss of the present sample.

psychopathy and of impaired judgment. In such cases, knowledge was not being used effectively to deal with problems, hence the inference of imparied judgment. Glasser & Zimmerman (1967) believed Comprehension to assess the child's ability to use practical judgment in everyday social actions, social acculturation, and maturing moral sense. Success was believed to depend upon the possession of practical information plus the ability to evaluate and utilize past experience in socially acceptable ways. Emotional balance and stability were assessed by the child's ability to avoid verbalizations of impulsive, antisocial, or bizarre behavior. High scores might reflect social maturity, wide experience, and ability to verbalize well. Low scores suggested that the child's ability to cope with the everyday environment might have been limited due to restrictions of a physical or psychological nature, e.g., overdependence.

Similarities. Rapaport et al. (1968) felt that low scores indicated a disturbance of the automatic balance in thought processes that allows for good mobilization of attitudes summoning up information and logic in an appropriate manner, and that maladjustment is encroaching upon concept formation. Glasser & Zimmerman (1967) felt that low scores reflected an overly concrete mode of approach, rigidity of thought processes, or negativism.

Vocabulary. Rapaport et al. (1968) maintained that Vocabulary depended for its development on the original wealth of educational environment. It could be affected by a readiness to accumulate or avoid accumulating information and knowledge. Relatively low weighted scores were believed characteristic of precariously adjusted normals with a poor cultural background. High weighted scores were believed most characteristic of patients given to intellectualization or compulsive defense mechanisms. Glasser & Zimmerman (1967) believed vocabulary to be a measure of learning ability, verbal information, and range of ideas, influenced, however, by the child's cultural and educational background. They found it to be the best single measure of intelligence, and relatively invulnerable to emotional disturbance.

Picture Completion. Rapaport et al. (1968) believed that the function underlying achievement on Picture Completion was concentration acting upon visually perceived material. The discovery of inconsistency or consistency--the appraisal of relationships in a limited time--was felt to be one essential characteristic of concentration. Glasser & Zimmerman (1967) believed Picture Completion to measure the capacity to identify and isolate essential from non-essential characteristics, and to give some estimate of the child's attention to the environment. Attention and concentration were believed to be important elements. Low scores could be attributed to poor attention and concentration due to anxiety.

Picture Arrangement. Rapaport et al. (1968) believed that S's achievement was a reflection of his ability to anticipate the consequences of initial acts or situations, and hence was a reflection of his planning ability. It implies both attention and judgment. Glasser & Zimmerman (1967) believed that Picture Arrangement involved perception, visual comprehension, planning involving sequential and causal events and synthesis into intelligible wholes. It was also believed to assess social alertness, common sense, and perception to details. High scores could reflect alertness to details, planning ability, interest in others and social situations, and social skills. Low scores could reflect inattentiveness, impulsive or anxiety orientation to action, with no delay mechanisms taking effect.

Object Assembly. Rapaport et al. (1968) believed Object Assembly to measure visual-motor coordination. Impaired efficiency could reflect depressive or neurasthenic retardation or anxiety. Glasser & Zimmerman (1967) believed Object Assembly to assess visual-motor coordination. High scores could be due to motor skills and freedom to explore new solutions. Low scores could reflect a lack of planning and body image problems.

Block Design. Block Design was felt by Rapaport et al. (1968) to assess visual organization and concept formation, as evidenced in the analytic and synthetic phases of performance. Depression was believed to be the most potent factor in impairment of efficiency. Glasser & Zimmerman (1967) felt that Block Design was the most culture-fair of all the subtests. High scores were believed reflective of good conceptualizing ability, analytic and synthesizing talents, and flexibility in problem solving. Low scores could be due to perceptual problems, poor spatial conceptualizing, lack of reflectiveness, and compulsive trends.

Digit Span. Rapaport et al. (1968) believed Digit Span to be more vulnerable to maladjustment than the other verbal subtests. It was felt to be a test of attention, which was considered an effortless, passive, unhampered contact with outside reality--a free receptiveness. This free receptiveness appeared to be hampered if S's affects and anxieties were not well-controlled, and got out of balance. It was therefore, also, a measure of degree of anxiety. Glasser & Zimmerman (1967) felt Digit Span to measure immediate auditory recall and immediate attention span. Low scores could be due to anxiety.

Coding (Digit Symbol). Rapaport believed Coding to measure visual activity, motor activity, and psychomotor speed. It was believed impaired by anxious hesitancy and obsessive doubting. Glasser & Zimmerman (1967) believed this test to be a measure of visual-motor dexterity and of motivation, but did not believe it related to any aspect of intelligence.

Subtest-Behavior Correlates

The subtest correlates of specific behavioral and personality characteristics presented below have been derived entirely from empirical investigation, except for those presented by Wechsler (1958), who postulated that Arithmetic, Digit Span, and Digit Symbol were particularly susceptible to anxiety, with Object Assembly and Picture Arrangement occasionally reflecting this trait.

A summary of the research is as follows:

Anxiety. Jurjevich (1963) found a low but significant negative correlation of Digit Span with anxiety. Moldawsky & Moldawsky (1952) found that evoked anxiety led to a lowering of Digit Span. Calvin (1955) found a negative relationship between Anxiety-scale score and Information, Digit Span, Arithmetic, Vocabulary, Block Design, and Object Assembly. Hafner et al. (1960) found a significant negative correlation between the Children's MAS and Block Design and Coding.

Emotional Disturbance. Bortner & Birch (1970) found emotionally disturbed children to have lags in score on Comprehension, Arithmetic, Digit Span, and Coding.

Distrust. Wiener (1957) found distrust as measured by the MMPI to be correlated with impaired performance on the WAIS Picture Completion and Similarities.

Social Competence. Krippner (1964) found Comprehension correlated with social competence. Picture Arrangement did not correlate with social competence.

Motivation. Oakland (1969) found Coding to correlate with achievement orientation.

Body Concerns. Blatt et al. (1965) found Object Assembly significantly lower for children with concerns about bodily intactness.

## Hypotheses

On the basis of the preceding review of the literature, hypotheses were formulated concerning the relationship of single subtests to personality or behavioral characteristics. Because of the lack of consistency in research findings, the current study considered all hypotheses having any degree of theoretical, clinical, or empirical substantiation by comparing all hypothesized subtests, individually, with a criterion. Three different types of criterion measures, two behavioral and one projective, were used. A brief description and reasons for inclusion follow. A more thorough description of the instruments appears in the Method section.

### I Child Behavior Characteristics Form (CBC)

The CBC (Borgatta & Fanshel, 1970) is a rating-scale instrument designed for the description and evaluation of a number of areas of functioning. The scale consists of sixteen composite scores, each containing component subscales. Five of the composite scores were used in the present study. They are presented below, along with the corresponding hypotheses.

#### Emotionality-Tension

Subscales: Tension-Anxiety--is fearful, anxious, is overly emotional, is very tense, is overly nervous.
Irritability-Tension--is fidgety, gets upset easily, is tense, is irritable, is restless, fusses and frets, is over-excited easily.

Related negatively to performance on the following subtests:

| | |
|---|---|
| Digit Span: | (Moldawsky & Moldawsky, 1952; Calvin, 1955; Wechsler, 1958; Jurjevich, 1963; Glasser & Zimmerman, 1967; Rapaport et al., 1968; Bortner & Birch, 1970) |
| Coding: | (Hafner et al., 1960; Rapaport et al., 1968; Bortner & Birch, 1970) |
| Block Design: | (Calvin, 1955; Hafner et al., 1960) |
| Object Assembly: | (Calvin, 1955; Wechsler, 1958; Rapaport et al., 1968) |
| Picture Arrangement: | (Wechsler, 1958; Glasser & Zimmerman, 1967) |
| Picture Completion: | (Glasser & Zimmerman, 1967) |

Reason for inclusion. There is considerable disagreement in the literature as to whether or not anxiety can be predicted from subtests, and if so, whether this merely reflects a momentary disturbance or an underlying personality characteristic. The CBC rating, based upon observation of the child in everyday circumstances, would appear to reflect the latter. In addition, since anxiety and tension can be disruptive forces in and out of school, as well as indicators of underlying pathology, it would be of practical value to be able to assess these characteristics from subtest data.

Alertness-Intelligence

Subscales: Alertness--is alert, is bright, is smart.
Attention-Curiosity--is interested in what goes on, is curious about things around him, pays attention to things going on.
Intelligence--is rational and logical, is clearminded, is intelligent.

Related positively to performance on the following subtests:

Information: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Comprehension: (Krippner, 1964; Glasser & Zimmerman, 1967)

Vocabulary: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Picture Arrangement: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Picture Completion: (Glasser & Zimmerman, 1967)

Reason for inclusion. In the absence of formal intelligence test data, estimates of a child's 'intelligence' may be made from observation of such characteristics as 'alertness' or 'interest'. It would be useful to know which aspects of measured intelligence are related to these perceived characteristics.

Defiance-Hostility

Subscales: Defiance--is stubborn, is defiant, is resistant.
Hostility--is rough or unruly, is antagonistic towards others, is hostile towards others, is rebellious.
Unsocialized--is dangerously daring, is reckless, risks self harm without apparent concern.
Lies, steals, destroys--tells lies, destroys property, commits vandalism, steals.

Related negatively to performance on the following subtests:

Comprehension: (Krippner, 1964; Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Picture Arrangement: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

<u>Picture Completion</u>: (Wiener, 1957)

<u>Similarities</u>: (Wiener, 1957; Glasser & Zimmerman, 1967)

<u>Reason for inclusion</u>. This criterion measures the possibility of danger to oneself and to others, and anti-social, acting-out behavior. Prediction of the propensity for behavior of this kind might allow preventive or remedial action to be taken, e.g., school or treatment programs. Although this type of behavior might be in evidence during the testing procedure itself (and thus assessed directly), this is not always the case, given a skilled and sympathetic examiner.

<u>Responsibility</u>

Accepts responsibilities, is interested in getting things done, is conscientious, pays attention to the task at hand.

Related positively to performance on the following subtests:

<u>Comprehension</u>: (Krippner, 1964; Glasser & Zimmerman, 1967; Rapaport et al., 1968)

<u>Picture Arrangement</u>: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

<u>Reason for inclusion</u>. Proficiency on these subtests is hypothesized to be reflective of social maturity, although existing research questions the validity of this assumption.

Learning Difficulty

Subscales: Distractibility--gets distracted easily, loses interest in things easily.
Learning Difficulty--is slow to understand people, has difficulty in learning things.

Related negatively to performance on the following subtests:

| | |
|---|---|
| Information: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Vocabulary: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Digit Span: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Coding: | (Oakland, 1969) |

Reason for inclusion: It would be useful to be able to predict learning difficulty with children who have had a minimum of school experience, or for whom a question of placement is at issue in absence of sufficient supporting academic data. It would also be of interest to ascertain whether the subtests that predict learning difficulty as a general behavioral characteristic differ from those that are related to actual academic problems as measured by the School Report.

II School Report

This instrument is a report of intellectual and social behavior, filled out by the child's current teacher. The report consists of a number of rating scale measures, several of which have been selected as criteria. A fuller description of the instrument appears in the Method section.

Quality of Schoolwork (excellent to very poor)

Related negatively to performance on the following subtests:

| | |
|---|---|
| Information: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Vocabulary: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Digit Span: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Coding: | (Oakland, 1969) |

Attitude Towards School (likes very much to dislikes intensely)

Related negatively to performance on the following subtests:

| | |
|---|---|
| Information: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Vocabulary: | (Glasser & Zimmerman, 1967; Rapaport et al., 1968) |
| Coding: | (Oakland, 1969) |

Relationship to Classmates (gets along very well to gets along poorly)

Related negatively to performance on the following subtests:

| | |
|---|---|
| Comprehension: | (Krippner, 1964; Glasser & Zimmerman, 1967; Rapaport et al., 1968) |

Picture Arrangement: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Presence of Close Friends at School (none to several)

Related positively to performance on the following subtests:

Comprehension: (Krippner, 1964; Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Picture Arrangement: (Glasser & Zimmerman, 1967; Rapaport et al., 1968)

Reason for inclusion. Intelligence test performance and school success are presumed correlated with each other. The purpose in using School Report criteria is to assess how subtest performance correlates with actual success in school.

## III Michigan Picture Test

The Michigan Picture Test (MPT) is a projective personality test designed to sample crucial areas of personal-social adjustment in which children frequently have problems (Andrew et al., 1951). Among several scores derived from performance on this test is a "Tension Index," assessing degree of adjustment on the basis of verbal expressions of unresolved needs (Walton et al., 1951). A further description of this instrument appears in the Method section.

The Tension Index, indicative of level of emotional adjustment, should be positively correlated with amount of subtest scatter, i.e., variance around S's own mean score (Jastak, 1963; Wittenborn & Holzberg, 1955), and negatively with scores on Comprehension, Digit Span, and Coding (Bortner & Birch, 1970). The purpose of using this measure as a criterion is to determine whether presumed indicators of emotional maladjustment on the WISC will correlate with projective, as opposed to behavioral, measures of maladjustment.

# II Method

## Measuring Instruments

### Child Behavior Characteristics Form (CBC)

The CBC (as noted under Hypotheses) is a behavioral rating form. It was developed in a series of four replicating studies from which a number of variables having reasonable stability across studies were derived (Borgatta & Fanshel, 1970). Three Age-Specific forms were developed: one for children up to two years of age; one for ages two to six; and one for ages seven to seventeen-plus. The last form was used for Ss of the present study.

The CBC consists of 115 items, rated on a five point scale from Never to Almost Always, by, in general, professional workers, e.g., social workers, pediatric nurses. On the basis of factor analyses, items were grouped into related clusters (component scores), which were further reduced to sixteen composite scores (Borgatta & Fanshel, 1970). For the five composite scores used in the present study, Cronbach Alpha Coefficients for the four sets of data used in the development of the instrument, and inter-rater reliability data for 165 pairs of raters in the most recent replication, are presented in Table 1. (A complete listing of the component and composite scores and related Cronbach Alpha Coefficients appears in the Appendix, p. 197.)

Table 1

Cronbach Alpha Coefficients and Inter-rater Correlation Coefficients for Composite CBC Scores[2]

| Composite Score | Alpha Coefficient | Inter-rater coefficient |
|---|---|---|
| 1. Alertness-Intelligence | .92 | .56 |
| 2. Learning Difficulty | .81 | .48 |
| 3. Defiance-Hostility | .91 | .58 |
| 4. Responsibility | .84 | .44 |
| 5. Emotionality-Tension | .90 | .56 |

[2]Condensed from Borgatta & Fanshel (1970).

Zero-order correlations between CBC scores and ratings of emotional condition by the testing psychologists (see Subjects), using a scale of one to three (Abnormal, Suspect, Normal) for 521 Ss tested at Time I (see Subjects), showed low but significant correlations for all composite scores but Responsibility. (See Table 2.)

Table 2

Zero-order Correlations between CBC Scores and Assessment of Emotional Condition of Ss at Time I Assessment[3]

| CBC Score | Time I Correlation |
|---|---|
| 1. Alertness-Intelligence | .100* |
| 2. Learning Difficulty | -.235*** |
| 3. Responsibility | -.073 |
| 4. Defiance-Hostility | -.212*** |
| 5. Emotionality-Tension | -.188*** |

***$p < .001$; **$p < .01$; *$p < .05$
[3]Condensed from Fanshel (1972).

CBC rating forms for Ss of the present study were filled out by the caseworker assigned to the child's case after the child had been in care for at least 90 days (see Subjects).

Michigan Picture Test

The Michigan Picture Test (MPT) is a projective personality test designed for use with children ages 8 to 14. It consists of sixteen pictures, eight general, four male, and four female, so that a complete set for any one child consists of twelve cards. Four cards, designated "core cards," were selected for rapid administration. The child is given a card and requested to make up a story, which can then be analyzed on a number of dimensions.

The test was designed to investigate and measure the emotional reactions of children in the preadolescent and adolescent stages of development (Andrew et al., 1953).

One of the scoring indices, Tension Index, was derived to obtain a global measure of basic unresolved needs. The meaning of the measure is based upon "the relative differences in frequency of projected verbalized expressions of unresolved conflict in groups of well- and poorly-adjusted school children" (Andrew et al., 1953, p. 36). To determine the score, the four core cards are administered and verbal expression of four needs--love, extrapunitiveness, submission, and personal adequacy--is noted.

For the standardization sample, the number of needs expressed was significantly greater for the poorly-adjusted children at all grade levels. Interscorer reliability was high (.98) for a randomly selected sample of 45 Ss at different grade levels (Andrew et al., 1953).

Ss in the present study were administered the MPT by one of the three psychologists testing the child, after administration of the WISC (see Subjects).

School Report

The School Report form is a rating scale instrument designed for use in the Child Welfare Research Program (CWRP) from which Ss for the current study were obtained. (See Subjects.) It is concerned with a number of aspects of the child's school functioning. Items involve the child's school status, e.g., attendance, academic performance, and behavior, and are filled out by the child's current teacher. Since this instrument had not been used previously, no data on reliability or validity were available.

Five items were selected for the current analysis:

1. Attendance

   Is this child attending regular and/or special classes?

   Normal School Program

   Attends all regular school classes for age and program

   Special Modified School Program

   Attends only selected regular classes, no special classes
   Attends selected regular classes and some special classes
   Attends only special classes
   Attends special school where all classes are "special"--i.e., "600" school

2. Quality of Schoolwork

   In general, what is the level of this child's schoolwork (not his/her behavior) this year?

   An excellent pupil
   Satisfactory pupil
   An average pupil
   A poor pupil
   A very poor pupil

3. Child's Attitude Toward School

   Which statement best describes child's general attitude toward school?

Likes and enjoys school very much
Likes and enjoys school moderately
Neither likes nor dislikes school; more or less neutral feelings
Dislikes school intensely

4. Child's Relationships in School

Which statement best describes the child's relationship with his/her classmates while at school?

Gets along very well
Gets along quite well
Gets along fairly well
Gets along poorly
Gets along very poorly

5. Presence of friends

Does the child have any close friends at school (in own class)

No close friends
One fairly close friend
One very close friend
Several fairly close friends
Several very close friends

The School Report form was sent to the child's teacher by the child's caseworker, with instructions to fill it out and return it by mail to the data collection center.

## Subjects

Ss for this study were drawn from the Child Welfare Research Program (CWRP), a project affiliated with the Columbia School of Social Work.[4] The group of children designated as the CWRP sample may be generally described by the following statement:

> "A quota of 624 New York City children stratified by age and sex covering dependent, neglected, delinquent and "person-in-need-of supervision" (PINS) of ages birth through 12 years of age who entered foster care (excluding adoption and controlled residences or training schools) at partial or full expense to the City budget during the 1966 calendar year, and who have never experienced previous placement (or had a sibling so experienced) in a licensed voluntary or public foster care agency and who remained in care a minimum of 90 continuous days".
>
> (CWRP Progress Report, 1967, section II, p. 2)

Ss for the present study consisted of 175 children, aged 8 to 13, drawn from the above sample after the first round of testing. For each S, WISC IQ, Michigan Picture Test scores, CBC composite scores, and School Report scores were obtained, wherever possible. (Some problems were encountered with missing data; they are discussed in the Results section.)

The sex and ethnic breakdown of the sample is presented in Table 3.

[4]The project is under the direction of David Fanshel, D.S.W.

Table 3

Sex and Ethnic Distribution of Ss Obtained from CWRP Sample

| Sex | Ethnicity | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|
| | White | | Negro | | Puerto Rican | | | |
| | n | % | n | % | n | % | n | % |
| Male | 30 | 17 | 32 | 18 | 34 | 19 | 96 | 54 |
| Female | 19 | 11 | 22 | 13 | 38 | 22 | 79 | 46 |
| Total | 49 | 28 | 54 | 31 | 72 | 41 | N = 175 | |

# III Results

## Treatment of the Data

The problem under consideration has been developed, thus far, in terms of hypotheses to be evaluated. Due to the nature of the data, however, formal hypothesis testing did not appear to be the most feasible approach. The major behavioral measure, the CBC, consists of composite scores that are conceptually, but not statistically, independent. Although an attempt to collapse the original factor scores (upon which the composite scores are based) into second order factors was not successful (Borgatta & Fanshel, 1970), there was sufficient overlap to preclude treating the factors as statistically independent.

Two different approaches could have been followed to deal with the non-independence of the criteria:

a) the number of criteria could have been collapsed until statistical independence was obtained. This approach, however, would probably have resulted in a very small number of items that would have been extremely difficult to interpret and would have lacked comparability with previous research and theory;

b) in lieu of hypothesis testing of statistically independent criteria, focus could be placed on finding large multiple correlations between predictor and criterion variables.

The latter approach was selected in the interest of clarity and potential clinical applicability. For research of this nature to be of use to the clinician, the variables under consideration should be directly applicable to the population involved. Although this may entail some loss of statistical purity, there is little point in producing studies that are 'clean' but of no practical or theoretical value.

To test the hypotheses, a number of regression models were established. Each model consisted of predictor variables and a criterion correlated in a least-squares regression. The models were ordered to determine, first, the proportion of variance attributable to non-WISC or demographic variables, then, to assess the contribution of the WISC variables. F tests were performed to evaluate the increment between models. The hypothesis associated with each model was, therefore, evaluated in three ways:

1) whether the addition of the WISC variable resulted in a significant multiple correlation.

2) whether the partial correlation for the WISC variable was significant, i.e., was the correlation between WISC variable and criterion significant when demographic and tester variables were held constant.

3) whether the addition of the WISC variable significantly increased the multiple correlation over that obtained with demographic variables alone.

A significance level of .05 was established for both multiple and partial correlations, and increments. Where significance was obtained beyond the .05 level, it is indicated.

Although the major focus of this study is an assessment of the feasibility of behavioral prediction from WISC subtests, it was considered important to compare the relative efficacy of prediction from subtests with prediction from the 'composite' IQ scores, i.e. Full Scale IQ, Verbal IQ, Performance IQ, and Verbal IQ minus Performance IQ, since there would be little value in working from subtests if the composite measures proved to be more powerful predictors. All four composite scores, therefore, were entered separately in different models.

In addition, since factor analytic studies of the WISC (Cohen, 1959; Goodenough & Karp, 1961) have challenged the feasibility of using individual subtests, modified factor scores (based upon the Goodenough & Karp, 1961, factor analysis) were also entered as predictors. The factors were designated F Verbal (F Verb), consisting of the sum of the Information, Comprehension, Similarities and Vocabulary subtests, F Attention (F Attn), consisting of the sum of the Digit Span and Coding subtests, and F Performance (F Perf), consisting of the sum of the Block Design, Picture Completion, and Object Assembly subtests. (The only modification involved omitting Arithmetic from F Attn, since it had not been administered.)

The evaluation of the usefulness of the WISC subtests was therefore carried out in two phases: (1) testing of the hypotheses derived from the literature in the manner described above, and (2) comparison of subtest results with those obtained from composite and factor scores.

The advisability of controlling for age, sex, ethnicity, and socio-economic status (SES) has been established earlier in this paper. These variables were, therefore, entered as predictors. SES was measured by an index incorporating five variables: (1) main source of support; (2) education; (3) income rank of neighborhood; (4) juvenile delinquency rank of neighborhood; (5) number of negative housing conditions (Jenkins & Norman, 1972). Ethnicity, a nominal category, was coded into "dummy variable" form (Cohen, 1968), forming Non-white (Negro and Puerto Rican) v. White, and Negro v other (white and Puerto Rican) contingencies.

Further considerations involved the inclusion of a Tester category to control for variance attributable to differences among the three testers, coded into the dummy variables of 1 v. other, and 2 v. other.

The predictors, then, consisted of the ten WISC subtests, in both scaled score form (S subtests), and in difference score form (D subtests), (based upon deviation from S's own Verbal and Performance mean scores), Full Scale IQ, Verbal IQ, Performance IQ, Verbal IQ minus Performance IQ, age, sex, ethnicity, SES, and tester.

## CBC Criteria

Because of missing data, the sample for this analysis was reduced from 175 to 155. (See Appendix, Table B, for breakdown by sex and ethnicity.)

For each CBC criterion, the same set of predictor models were used:

CBC Model I — Age, Sex

CBC Model II — Age, Sex, Ethnicity, SES

(Model II formed the reference model (RM) against which each subsequent model was evaluated to assess the contribution of the WISC variable.)

CBC Model III — RM + Tester, S subtests (using subtests hypothesized related to the criterion. All hypothesized subtests were entered first as a group, then individually in subsequent models designated IIIA, IIIB, etc.)

CBC Model IV — RM + Tester, D subtests (using the same format as Model III)

| | |
|---|---|
| CBC Model V | RM + Tester, Full Scale IQ |
| CBC Model VI | RM + Tester, Verbal IQ |
| CBC Model VII | RM + Tester, Performance IQ |
| CBC Model VIII | RM + Tester, VIQ-PIQ |
| CBC Model IX | RM + Tester, F Verb |
| CBC Model X | RM + Tester, F Attn |
| CBC Model XI | RM + Tester, F Perf |
| CBC Model XII | RM + Tester, F Verb, F Attn, F Perf |

The results are organized by criterion composite score: Emotionality-Tension, Alertness-Intelligence, Defiance-Hostility, Learning Difficulty, Responsibility.

Emotionality-Tension (See Table 4.)

Demographic variables. Models I and II, entering non-WISC variables, were not significant in any respect.

Scaled-score subtests. Model III (S subtests) did not produce either a significant increment over RM or significant multiple correlation. There were, however, significant partial correlations for Coding (r = -.161), Digit Span (r = -.166) and tester contingencies 1 v. other (r = .175) and 2 v. other (r = .164).

Model IIIA (Digit Span) did not produce a significant multiple correlation, although the increment over RM was significant. Significant partial correlations were obtained for Digit Span (r = -.180) and the 2 v. other tester contingency (r = .156).

Model IIIF (Coding) produced a significant increment over RM, and significant partial correlations for tester contingencies 1 v. other and 2 v. other (r = .158 and .156, respectively), and Coding (r = -.176). The multiple correlation was not significant.

Models IIIB (Picture Completion), IIIC (Picture Arrangement), IIID (Block Design) and IIIE (Object Assembly) were not significant in any respect.

Difference-score subtests. None of the D subtest models produced significant correlations for any of the WISC variables.

Model IV (D subtests) produced a significant partial correlation for the 2 v. other tester contingency (r = .171).

Model IVA (D Digit Span) produced a significant partial correlation for the 2 v. other contingency ($r = .158$).

Model IVE (D Coding) produced a significant partial correlation for the 2 v. other tester contingency ($r = .166$).

Models IVB (D Picture Arrangement), IVC (D Block Design), IVD (D Object Assembly) and IVF (D Picture Completion) were not significant in any respect.

Composite IQ scores. Model V (Full Scale IQ) produced a significant increment over RM and significant partial correlation for Full Scale IQ ($r = -.168$), although the multiple correlation was not significant.

Model VI (Verbal IQ) was significant with respect to increment over RM, although the multiple correlation was not significant. A significant partial correlation for Verbal IQ was obtained ($r = -.181$), as well as a significant tester effect for the 1 v. other contingency ($r = .157$).

Models VII (Performance IQ) and VIII (Verbal IQ minus Performance IQ) were not significant in any respect.

Factor scores. Models IX (F Verb) and XI (F Perf) were not significant in any respect.

Model X (F Attn) produced the only significant multiple correlation for this criterion ($R = .312$), a significant increment over RM ($p < .01$), and significant partial correlations for F Attn ($r = -.232$, $p < .01$) and tester contingencies 1 v. other and 2 v. other ($r = .169$ and $.167$, respectively).

Model XII (F Verb, F Attn, F Perf) was not significant with respect to the multiple correlation, but produced a significant increment over RM and a significant partial correlation for F Attn (r = -.201).

Alertness-Intelligence (See Table 5.)

Demographic variables. Neither Model I nor Model II (non-WISC variables) was significant, although Model II produced a significant increment over Model I.

Scaled-score subtests. Model III (S subtests) produced a significant multiple correlation ($R = .468$, $p < .001$), significant increment over RM ($p < .001$) and significant partial correlation for Information ($r = .167$).

Model IIIA (Information) produced a significant multiple correlation ($R = .433$, $p < .001$), significant increment over RM ($p < .001$), and significant partial correlation for Information ($r = .344$, $p < .001$).

Model IIIB (Comprehension) produced a significant multiple correlation ($R = .385$, $p < .01$), significant increment over RM ($p < .01$) and significant partial correlation for Comprehension ($r = .275$, $p < .01$).

Model IIIC (Vocabulary) produced a significant multiple correlation ($R = .377$, $p < .01$), significant increment over RM ($p < .01$), and significant partial correlation for Vocabulary ($r = .262$, $p < .01$).

Model IIID (Picture Arrangement) produced a significant multiple correlation ($R = .345$), significant increment over RM, and significant partial correlation for Picture Arrangement ($r = .210$).

Model IIIE (Picture Completion) produced a significant multiple correlation ($R = .392$, $p < .01$), significant increment over RM ($p < .01$), and significant partial correlation for Picture Completion ($r = .285$, $p < .001$).

Difference-score subtests. None of the D subtest models were significant in any respect.

Composite IQ scores. The composite IQ models, with the exception of Model VIII (Verbal IQ minus Performance IQ), all produced highly significant multiple correlations, increments over RM, and partial correlations for the WISC variables.

Model V (Full Scale IQ) produced a multiple correlation of .467 ($p < .0001$), and partial correlation for Full Scale IQ of .389 ($p < .0001$).

Model VI (Verbal IQ) produced a multiple correlation of .444 ($p < .001$), and partial correlation for Verbal IQ of .359 ($p < .0001$).

Model VII (Performance IQ) produced a multiple correlation of .419 ($p < .001$) and partial correlation for Performance IQ of .325 ($p < .001$).

Model VIII (Verbal IQ minus Performance IQ) was not significant in any respect.

Factor scores. The factor models, similarly, produced significant results.

Model IX (F Verb) produced a multiple correlation of .427 ($p < .001$), significant partial correlation for F Verb ($r = .336$, $p < .001$), and significant increment over RM ($p < .001$).

Model X (F Attn) produced a multiple correlation of .465 ($p < .0001$), significant partial correlation for F Attn ($r = .386$, $p < .0001$), and significant increment over RM

($p < .0001$). There was, in addition, a significant tester effect for the 2 v. other contingency ($r = -.178$).

Model XI (F Perf) produced a multiple correlation of .388 ($p < .01$), significant increment over RM ($p < .01$), and significant partial correlation for F Perf ($r = .279$, $p < .001$).

All three factor scores entered together (Model XII) resulted in a multiple correlation of .492 ($p < .0001$), (the highest obtained with this criterion), significant increment over RM ($p < .0001$), and significant partial correlation for F Attn ($r = .234$, $p < .01$).

<u>Defiance-Hostility</u> (See Table 6.)

None of the models produced significant multiple correlations with the criterion or significant increments over RM.

Model X (F Attn), however, produced a significant partial correlation for F Attn ($r = -.191$).

Responsibility (See Table 7.)

Demographic variables. Neither Model I nor Model II (non-WISC variables) were significant in any respect.

Scaled-score subtests. Model III (S subtests) was not significant in any respect.

Model IIIA (Comprehension) produced a significant increment over RM and significant partial correlation for Comprehension ($r = .158$). The multiple correlation was not significant.

Model IIIB (Picture Arrangement) was not significant in any respect.

Difference-score subtests. None of the D subtest models were significant in any respect.

Composite IQ scores. Model V (Full Scale IQ) produced a significant multiple correlation ($R = .325$), significant increment over RM ($p < .01$), and significant partial correlation for Full Scale IQ ($r = .259$, $p < .01$).

Model VI (Verbal IQ) produced a significant increment over RM, although the multiple correlation was not significant. Significant partial correlations were found for Verbal IQ ($r = .221$, $p < .01$) and the Non-white v White contingency ($r = .160$).

Model VII (Performance IQ) produced a significant increment over RM ($p < .01$) and a significant partial correlation for Performance IQ ($r = .227$, $p < .01$), although the multiple correlation was not significant.

Model VIII (Verbal IQ minus Performance IQ) was not significant in any respect.

Factor scores. Model IX (F Verb) produced a significant increment over RM, and significant partial correlation for F Verb ($r = .182$). The multiple correlation was not significant.

Model X (F Attn) produced a significant multiple correlation ($R = .368$, $p < .01$), significant increment over RM ($p < .001$), and significant partial correlation for F Attn ($r = .314$, $p < .001$).

Model XI (F Perf) was significant with regard to increment over RM and partial correlation for F Perf ($r = .192$). The multiple correlation was not significant.

Model XII (F Verb, F Attn, F Perf) produced a significant multiple correlation ($R = .372$), significant increment over RM ($p < .01$), and significant partial correlation for F Attn ($r = .238$, $p < .01$).

Learning Difficulty (See Table 8.)

Demographic variables. Models I and II (non-WISC variables) were not significant in any respect.

Scaled-score subtests. Model III (S subtests) produced a multiple correlation of .461 ($p < .001$), significant increment over RM ($p < .0001$) and significant partial correlation for Coding ($r = -.223$, $p < .01$).

Model IIIA (Information) produced a significant multiple correlation ($R = .330$, $p < .01$), significant increment over RM ($p < .0001$) and significant partial correlation for Information ($r = -.334$, $p < .0001$).

Model IIIB (Vocabulary) produced a significant multiple correlation ($R = .348$), significant increment over RM ($p < .01$), and significant partial correlation for Vocabulary ($r = -.275$, $p < .001$).

Model IIIC (Digit Span) produced a significant multiple correlation ($R = .330$), significant increment over RM ($p < .01$), and significant partial correlation for Digit Span ($r = -.251$; $p < .01$).

Model IIID (Coding) produced a significant multiple correlation ($R = .366$, $p < .01$), significant increment over RM ($p < .001$), and significant partial correlations for Coding ($r = -.299$, $p < .001$) and the 2 v. other contingency ($r = .197$).

Difference-score subtests. Model IV (D subtests) was not significant with respect to the multiple correlation and increment over RM. There were, however, significant partial correlations for the 2 v. other contingency,

($r = .191$) and for Coding ($r = -.159$).

Model IVA (D Information) and IVB (D Vocabulary) were not significant with respect to the multiple correlation and increment over RM, but produced significant 2 v. other partial correlations.

Model IVC (D Digit Span) was not significant in any respect.

Model IVD (D Coding) produced a significant increment over RM and significant partial correlation for the 2 v. other contingency.

Composite IQ scores. Multiple correlations for all the composite IQ measures (except for Model VIII) were significant.

Model V (Full Scale IQ) produced a significant multiple correlation ($R = .406$, $p < .01$), significant increment over RM ($p < .0001$), and significant partial correlation for Full Scale IQ ($r = -.348$, $p < .0001$).

Model VI (Verbal IQ) produced a significant multiple correlation ($R = .403$, $p < .01$), significant increment over RM ($p < .001$), and significant partial correlation for Verbal IQ ($r = -.344$, $p < .0001$).

Model VII (Performance IQ) produced a significant multiple correlation ($R = .346$), significant increment over RM ($p < .01$), and significant partial correlation for Performance IQ ($r = -.272$, $p < .01$).

Model VIII (Verbal IQ minus Performance IQ) was significant only in regard to a partial correlation for the 2 v. other tester contingency ($r = .165$). No other correlations were significant.

Factor scores. Model IX (F Verb) produced a significant multiple correlation ($R = .398$, $p < .01$), significant increment over RM ($p < .001$), and significant partial correlation for F Verb ($r = -.339$, $p < .001$).

Model X (F Attn) produced a significant multiple correlation ($R = .416$, $p < .001$), significant increment over RM ($p < .0001$), and significant partial correlations for F Attn ($r = -.361$, $p < .0001$), and the 2 v. other tester contingency ($r = .215$, $p < .01$).

Model XI (F Perf) produced a significant increment over RM, although the multiple correlation was not significant. There was also a significant partial correlation for F Perf ($r = -.211$, $p < .01$).

Model XII (F Verb, F Attn, F Perf) produced a significant multiple correlation ($R = .451$, $p < .001$), significant increment over RM ($p < .0001$), and significant partial correlations for F Verb ($r = -.185$) and F Attn ($r = -.224$, $p < .01$).

## Michigan Picture Test

Due to missing data for the Michigan Picture Test (MPT), the sample was reduced from 175 to 168. (See Appendix, Table B, for breakdown by sex and ethnicity.)

For the MPT Tension Index, the following models were used:

| | |
|---|---|
| MPT Model I | Tester |
| MPT Model II | Tester, Age, Sex |
| MPT Model III | Tester, Age, Sex, Ethnicity, SES |

(Model III formed the reference model (RM) against which each subsequent model was evaluated to assess the contribution of the WISC variable.)

| | |
|---|---|
| MPT Model IV | RM + S subtests (treated as in CBC Model III) |
| MPT Model V | RM + D subtests (treated as in CBC Model IV) |
| MPT Model VI | RM + Full Scale IQ |
| MPT Model VII | RM + Verbal IQ |
| MPT Model VIII | RM + Performance IQ |
| MPT Model IX | RM + VIQ-PIQ |
| MPT Model X | RM + Scatter (sum of the absolute value of the difference scores of all the subtests) |
| MPT Model XI | RM + F Verb |
| MPT Model XII | RM + F Attn |
| MPT Model XIII | RM + F Perf |
| MPT Model XIV | RM + F Verb, F Attn, F Perf |

Tension Index (See Table 9.)

Tester variables. Model I (Tester) revealed the presence of a large, significant tester effect ($R = .677$; $p < .0001$). The strength of this effect resulted in large, significant multiple correlations for all subsequent models. In some cases, however, the addition of WISC variables created a significant increment over RM, although the partial correlations for tester effects were always of much greater magnitude than for any other variable.

Demographic variables. Model II (Age, Sex) was significant only in regard to tester effects.

Model III (RM) produced a significant partial correlation for the Negro v. other contingency ($r = -.155$), in addition to the tester effects. The increment over RM was not significant.

Scaled-score subtests. Model IV (S subtests) resulted in a significant increment over RM ($p < .01$), with a multiple correlation of .717 ($p < .0001$). In addition to tester effects for the 1 v. other and 2 v. other contingencies ($r = -.566$ and $-.479$, respectively, $p < .0001$), there were significant partial correlations for the Non-white v. White contingency ($r = .214$, $p < .01$), Negro v. other contingency ($r = -.200$), and Comprehension subtest ($r = .174$).

Model IVA (Comprehension) produced a significant multiple correlation ($R = .713$, $p < .0001$), significant increment over RM ($p < .01$), and significant partial correlations for contingencies 1 v. other and 2 v. other

($r = -.559$ and $-.479$, respectively, $p < .0001$), Non-white v. White and Negro v. other ($r = .209$ and $-.206$, respectively, $p < .01$), and the Comprehension subtest ($r = .245$, $p < .01$).

Model IVB (Digit Span) produced a significant multiple correlation ($R = .699$, $p < .0001$), but non-significant increment over RM. Significant partial correlations were obtained for the 1 v. other and 2 v. other tester contingencies ($r = -.539$ and $-.560$, respectively, $p < .0001$), and for Non-white v. White and Negro v. other ($r = .167$ and $-.170$, respectively).

Model IVC (Coding) produced a significant multiple correlation ($R = .701$, $p < .0001$), significant increment over RM, and significant partial correlations for the 1 v. other and 2 v. other contingencies ($r = -.545$ and $-.562$, respectively, p  .0001), Non-white v. White and Negro v. other ($r = .165$ and $-.157$, respectively), and Coding ($r = -.167$).

Difference-score subtests. Model V (D subtests) was not significant for any of the WISC variables, and the increment over RM was not significant. There was, however, in addition to the tester effect, a significant partial correlation for the Negro v. other contingency ($r = -.157$).

Models VA (D Comprehension), VB (D Digit Span) and VC (D Coding) were all non-significant with respect to increment over RM and partial correlation for the WISC variable; they all exhibited significant tester and ethnic effects

Composite IQ scores. Model VI (Full Scale IQ) produced a significant increment over RM ($p < .001$), with a multiple correlation of .726 ($p < .0001$). There were significant tester effects for the 1 v. other and 2 v. other contingencies ($r = -.566$ and $-.515$, respectively, $p < .0001$), significant partial correlations for the Non-white v. White contingency ($r = .232$, $p < .01$), the Negro v. other contingency ($r = -.190$), and Full Scale IQ ($r = .309$, $p < .001$).

For Model VII (Verbal IQ), there was a significant increment over RM ($p < .01$), significant multiple correlation $R = .716$, $p < .0001$), and significant tester effects for the 1 v. other and 2 v. other contingencies ($r = -.560$ and $-.505$, respectively, $p < .0001$). There were also significant partial correlations for the Non-white v. White and Negro v. other contingencies ($r = .235$ and $-.217$, respectively, $p < .01$), and for Verbal IQ ($r = .259$, $p < .01$).

Model VIII (Performance IQ) produced a multiple correlation of .720 ($p < .0001$), significant increment over RM ($p < .001$), and significant tester effects for the 1 v. other and 2 v. other contingencies ($r = -.553$ and $-.537$, respectively, $p < .0001$). There were also significant partial correlations for the Non-white v. White contingency ($r = .181$) and for Performance IQ ($r = .281$, $p < .001$).

Model IX (VIQ-PIQ) was significant only with respect to tester effects. Model X (Scatter) was significant with respect to tester effects and the Negro v. other contingency. The increment over RM was not significant for either model.

Factor scores. Model XI (F Verb) produced a significant increment over RM ($p < .01$), significant multiple correlation ($R = .716$, $p < .0001$), and significant tester effects for the 1 v. other and 2 v. other contingencies ($r = -.559$ and $-.478$, respectively, $p < .0001$). The ethnic contingencies were significant for both Non-white and White and Negro v. other ($r = .240$ and $-.218$, respectively, $p < .01$). The partial correlation for F Verb was also significant ($r = .259$, $p < .01$).

For Model XII (F Attn), the increment over RM was significant ($p < .01$), with a multiple correlation of .706 ($p < .0001$). Tester contingencies were significant for both 1 v. other and 2 v. other ($r = -.552$ and $-.570$, respectively, $p < .0001$), and ethnic contingencies were significant for both Non-white v. White and Negro v. other ($r = .180$ and $-.169$, respectively). The partial correlation for F Attn was significant ($r = -.204$, $p < .01$).

Model XIII (F Perf) produced a significant increment over RM ($p < .01$) and multiple correlation of .716 ($p < .0001$). Partial correlations were significant for the 1 v. other and 2 v. other tester contingencies ($r = -.546$ and $-.535$, respectively, $p < .0001$), the Non-white v. White contingency ($r = .164$), and F Perf ($r = .260$, $p < .01$).

When all three factor scores were entered together (Model XIV), although a significant increment over RM was produced ($p < .01$), no significant partial correlations for the factor scores were found. Both tester and ethnic contingencies were significant.

## School Report

For many of the Ss, no School Report form had been completed. Since the number of Ss involved was sizeable, a correlation was performed between the 22 predictor and criterion variables, and a created variable labeled "complete data v. missing data," to determine whether the portion of the sample with complete data was significantly different in any respect from the portion without the completed School Report. A correlation of .222 was found between the created variable and Emotionality-Tension, and one of .182 with the Tension Index, both significant at the .05 level. However, since no significant differences were found between the two groups for any of the predictor variables, and since the two correlations were of low magnitude, the two groups would appear to be generally comparable.

Of the Ss for whom School Reports were returned, some were attending regular classes, others special classes in regular schools, while others were attending special schools. To account for the variance attributable to these differences, type of school attended was coded into the dummy variables of Regular School v. other, and Special School v. other (R v. O and S v. O), together forming a Regular v. Special (R v. S) category.

Although the models for all four School Report items are identical, the sample size varies due to failure of the teacher in some cases to complete all the items with usable information. The sample composition and size for the four criteria appear in the Appendix, Table B.

The models for the School Report items were:

| | |
|---|---|
| SR Model I | R v. S |
| SR Model II | R v. S, Age, Sex |
| SR Model III | R v. S, Age, Sex, Ethnicity, SES |

(Model III served as the reference model (RM) against which subsequent models were evaluated to assess the contribution of the WISC variable.)

| | |
|---|---|
| SR Model IV | RM + Tester, S Subtests (treated as with CBC Model III) |
| SR Model V | RM + Tester, D Subtests (treated as with CBC Model IV) |
| SR Model VI | RM + Tester, Full Scale IQ |
| SR Model VII | RM + Tester, Verbal IQ |
| SR Model VIII | RM + Tester, Performance IQ |
| SR Model IX | RM + Tester, VIQ-PIQ |
| SR Model X | RM + Tester, F Verb |
| SR Model XI | RM + Tester, F Attn |
| SR Model XII | RM + Tester, F Perf |
| SR Model XIII | RM + Tester, F Verb, F Attn, F Perf |

Results are organized by criteria: Quality of schoolwork, Attitude Toward School, Relationship to Classmates, Presence of Friends.

<u>Quality of Schoolwork</u> (See Table 10.)

<u>Attendance</u>. Model I (R v. S) was not significant in any respect.

<u>Demographic variables</u>. Models II and III were not significant in any respect.

<u>Scaled-score subtests</u>. Model IV (S subtests) produced a significant increment over RM ($p < .01$), and a significant partial correlation for Coding ($r = -.227$).

Model IVA (Vocabulary) produced a significant increment over RM (although the multiple correlation was not significant), and significant partial correlation for Vocabulary ($r = -.293$, $p < .01$).

Model IVB (Information) produced a significant increment over RM and significant partial correlations for the Negro v. other contingency ($r = .217$) and Information ($r = -.335$, $p < .01$).

Model IVC (Digit Span) produced a significant increment over RM, and a significant partial correlation for Digit Span ($r = -.316$, $p < .01$).

Model IVD (Coding) produced a significant increment over RM and significant partial correlation for Coding ($r = -.353$, $p < .01$).

<u>Difference-score subtests</u>. Model V (D sub tests), VA (D Information), VB (D Digit Span), VC (D Coding) and VD (D Vocabulary) were all not significant.

<u>Composite IQ scores</u>. Model VI (Full Scale IQ) produced a significant increment over RM ($p < .01$) and sig-

nificant partial correlation for Full Scale IQ ($r = -.369$, $p < .01$). The multiple correlation was not significant.

Model VII (Verbal IQ) produced a significant increment over RM and significant partial correlation for Verbal IQ ($r = -.322$, $p < .01$). The multiple correlation was not significant.

Model VIII (Performance IQ) produced a non-significant multiple correlation, significant increment over RM, and significant partial correlation for Performance IQ ($r = -.321$, $p < .01$).

Model IX (VIQ-PIQ) was not significant in any respect.

Factor scores. Model X (F Verb) produced a significant increment over RM and a significant partial correlation for F Verb ($r = -.296$, $p < .01$). The multiple correlation was not significant.

Model XI (F Attn) produced a significant multiple correlation ($R = .465$), significant increment over RM ($p < .01$) and significant partial correlation for F Attn ($r = -.408$, $p < .001$).

Model XII (F Perf) was not significant with respect to the multiple correlation and increment over RM. There was, however, a significant partial correlation for F Perf ($r = -.251$).

Model XIII (F Verb, F Attn, F Perf) produced a significant increment over RM ($p < .01$) and significant partial correlation for F Attn ($r = -.276$).

Attitude Towards School (See Table 11.)

No significant multiple correlations or increments over RM were obtained for any model.

Model II (R v. S, age, sex) produced a significant partial correlation for age (r = .232), as did Model III (RM) (r = .228).

Model VI (Full Scale IQ) produced a significant partial correlation for age (r = .212).

Model VIII (Performance IQ) produced a significant partial correlation for Age (r = .214) and for Performance IQ (r = -.214).

Model IX (VIQ-PIQ) produced a significant partial correlation for VIQ-PIQ (r = .213).

<u>Relationship to Classmates</u> (See Table 12.)

No significant multiple or partial correlations were found for any of the WISC variables.

Model I (R v. S) produced a significant multiple correlation (R = .253). The amount of variance accounted for by this variable was small, however, and the effect did not appear in subsequent models.

Presence of Friends (See Table 13.)

None of the models resulted in significant multiple correlations. The most striking finding was a consistent attendance effect. Many models evidenced an effect for one or both attendance contingencies (R v. O and S v. O). Also present in many models was a significant partial correlation for the Non-white v. White contingency.

Attendance. Model I (R v. S) was not significant.

Demographic variables. Model II (R v S, age, sex) was not significant.

Model III (RM) produced significant partial correlations for R v. O (r = -.226) and Non-white v. White (r = .227).

Scaled-score subtests. Model IV (S subtests) produced significant partial correlations for R v. O (r = -.235), S v. O (r = .281) and Non-white v. White (r = .281).

Model IVA (Comprehension) produced significant partial correlations for R v. O (r = -.227), S v. O (r = .283) and Non-white v. White (r = .273).

Model IVB (Picture Arrangement) produced significant partial correlations for R v. O (r = -.250), S v. O (r = .264), Non-white v. White (r = .290) and 2 v. other (r = .227).

Difference-score subtests. Model V (D subtests) produced significant partial correlations for R v. O (r = -.251), S v. O (r = .257), Non-white v. White (r = .279) and 2 v. other (r = .228).

Model VA (D Comprehension) produced significant partial correlations for R v. O (r = -.246), S v. O (r = .263), Non-white v. White (r = .275), and 2 v. other (r = .223).

Model VB (D Picture Arrangement) produced significant partial correlations for R v. O (r = -.250), S v. O (r = .261), Non-white v. White (r = .289) and 2 v. other (r = .228).

Composite IQ scores. Model VI produced significant partial correlations for R v. O (r = -.230), S v. O (r = .274) and Non-white v. White (r = .252).

Model VII (Verbal IQ) produced the only significant increment over RM. Significant partial correlations were obtained for S v. O (r = .284) and Verbal IQ (r = -.224).

Model VIII (Performance IQ) produced significant partial correlations for R v. O (r = -.245), S v. O (r = .267), Non-white v. White (r = .284) and 2 v. other (r = .223).

Model IX (VIQ-PIQ) produced significant partial correlations for R v. O (r = -.239), S v. O (r = .272), Non-white v. White (r = .274) and 2 v. other (r = .224).

Factor scores. Model X (F Verb) produced a significant partial correlation for S v. O (r = .285).

Model XI (F Attn) produced significant partial correlations for S v. O (r = .261), Non-white v. White (r = .273) and 2 v. other (r = .244).

Model XII (F Perf) produced significant partial correlations for R v. O (r = -.245), S v. O (r = .267), and Non-white v. White (r = .283).

Model XIII (F Verb, F Attn, F Perf) produced a significant partial correlation for S v. O (r = .268).

## Additional Analyses

### Tester Effects I

The original design entered the tester contingencies as a control for tester effects in the subtest-behavior correlations, and did not consider the subtest-tester relationship. To determine the vulnerability of the subtests themselves to tester effects, an additional analysis was performed, correlating the tester contingencies with each subtest. Results are presented in Table 14.

The multiple correlations were significant for all subtests except Picture Completion, and varied in magnitude from .211 (Digit Span) to .461 (Comprehension).

Tester Effects II

For several CBC models the following situation occurred: addition of Tester and WISC variables to RM produced a significant multiple correlation and increment over RM; both variables produced significant partial correlations with the criterion, making it difficult to determine the contribution of the WISC variable alone.

For these models, an additional analysis was performed. Two models, RM + WISC and RM + WISC + Tester, were created and compared to determine (a) whether significance was attained with the addition of only the WISC variable, and (b) whether the addition of Tester resulted in a significant increase in the multiple correlation over RM + WISC.

The three criteria affected were Alertness-Intelligence, Emotionality-Tension, and Learning Difficulty.

For Alertness-Intelligence, where only the F Attn model was involved, F Attn + RM produced a significant multiple correlation. The addition of tester did not produce a significant increment. (See Table 15.)

For Emotionality-Tension, where only the F Attn model was involved, F Attn + RM was not significant. Addition of Tester increased the multiple correlation to a significant level, although the increment itself was not significant. (See Table 16.)

For Learning Difficulty, three models were involved. (See Table 17.) Digit Span + RM was found to be non-significant, reaching significance only after the tester variables were entered.

Coding + RM was significant; the addition of Tester, however, significantly increased the multiple correlation.

F Attn + RM was also significant without Tester, although here too, the addition of Tester significantly increased the multiple correlation.

Table 4

Multiple, Partial, and Zero-Order Correlations for Emotionality-Tension Models

Model I  R = .049, p = .8340

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .005 | .9501 |
| Sex | .049 | .049 | .5569 |

Model II  R = .154, p = .6115,  Inc. II-I  p = .3608

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .001 | .9889 |
| Sex | .049 | .072 | .6168 |
| NW v W | -.096 | -.090 | .2731 |
| N v O | .045 | .093 | .2566 |
| SES | .092 | .033 | .6876 |

Model III  R = .333, p = .1879,  Inc. III-II  p = .0946

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .096 | .2532 |
| Sex | .049 | .152 | .0659 |
| NW v W | -.096 | -.099 | .2398 |
| N v O | .045 | .059 | .5118 |
| SES | .092 | .069 | .5813 |
| 1 v o | .089 | .175 | *.0342 |
| 2 v o | .102 | .164 | *.0468 |
| Digit Span | -.087 | -.166 | *.0448 |
| Pic. Comp. | -.047 | -.104 | .2155 |
| Pic. Arr. | -.083 | -.066 | .5616 |
| Block Des. | -.031 | -.028 | .7359 |

Table 4 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Obj. Assem. | -.086 | -.018 | .8214 |
| Coding | -.097 | -.161 | .0518 |

Model IIIA R = .278, p = .1515, Inc. IIIA-II p = *.0396

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .072 | .6103 |
| Sex | .049 | .095 | .2480 |
| NW v W | -.096 | -.072 | .6111 |
| N v O | .045 | .041 | .6287 |
| SES | .092 | .054 | .5496 |
| 1 v other | .089 | .147 | .0714 |
| 2 v other | .102 | .156 | .0545 |
| Digit Span | -.087 | -.180 | *.0266 |

Model IIIB R = .215, p = .5292, Inc. IIIB-II p = .3259

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .038 | .6549 |
| Sex | .049 | .056 | .5045 |
| NW v W | -.096 | -.042 | .6194 |
| N v O | .045 | .018 | .8260 |
| SES | .092 | .023 | .7817 |
| 1 v other | .089 | .130 | .1109 |
| 2 v other | .102 | .139 | .0889 |
| Pic. Comp. | -.047 | -.008 | .9154 |

Table 4 (continued)

Model IIIC R = .234, p = .3995, Inc. IIIC-II p = .1919

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .039 | .6393 |
| Sex | .049 | .063 | .5433 |
| NW v W | -.096 | -.056 | .5075 |
| N v O | .045 | .021 | .7945 |
| SES | .092 | .028 | .7389 |
| 1 v other | .089 | .132 | .1062 |
| 2 v other | .102 | .120 | .1409 |
| Pic. Arr. | -.083 | -.093 | .2598 |

Model IIID R = .219, p = .5011, Inc. IIID-II p = .2926

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .035 | .6732 |
| Sex | .049 | .048 | .5664 |
| NW v W | -.096 | -.043 | .6140 |
| N v O | .045 | .016 | .8430 |
| SES | .092 | .030 | .7155 |
| 1 v other | .089 | .134 | .0997 |
| 2 v other | .102 | .137 | .0929 |
| Block Des. | -.031 | -.043 | .6009 |

Model IIIE R = .227, p = .5541, Inc. IIIE-II p = .2342

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .031 | .7077 |
| Sex | .049 | .050 | .5514 |
| NW v W | -.096 | -.044 | .6016 |

Table 4 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .045 | .008 | .9187 |
| SES | .092 | .026 | .7519 |
| 1 v other | .089 | .134 | .0994 |
| 2 v other | .102 | .130 | .1114 |
| Obj. Assem. | -.086 | -.074 | .6247 |

Model IIIF R = .275, p = .1624, Inc. IIIF-II p = *.0440

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .058 | .5122 |
| Sex | .049 | .093 | .2617 |
| NW v W | -.096 | -.059 | .5145 |
| N v O | .045 | .024 | .7688 |
| SES | .092 | .044 | .6017 |
| 1 v other | .089 | .158 | .0519 |
| 2 v other | .102 | .156 | .0555 |
| Coding | -.097 | -.176 | *.0305 |

Model IV R = .280, p = .4453, Inc. IV-II p = .3013

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .074 | .6157 |
| Sex | .049 | .143 | .0828 |
| NW v W | -.096 | -.051 | .5509 |
| N v O | .045 | .038 | .6583 |
| SES | .092 | .030 | .7243 |
| 1 v other | .089 | .149 | .0702 |
| 2 v other | .102 | .171 | *.0375 |

Table 4 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| D Digit Span | -.040 | -.074 | .6170 |
| D Pic. Arr. | -.021 | -.097 | .2462 |
| D Bl. Des. | -.076 | -.030 | .7231 |
| D Obj. Assem. | -.024 | -.068 | .5761 |
| D Coding | -.042 | -.153 | .0627 |

Model IVA  R = .228, p = .5586,  Inc. IVA-II  p = .2299

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .047 | .5743 |
| Sex | .049 | .079 | .6610 |
| NW v W | -.096 | -.028 | .7310 |
| N v O | .045 | .013 | .8704 |
| SES | .092 | .018 | .8204 |
| 1 v other | .089 | .128 | .1164 |
| 2 v other | .102 | .158 | .0524 |
| D Digit Span | -.040 | -.076 | .6383 |

Model IVB  R = .216, p = .5236,  Inc. IVB-II  p = .3191

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .039 | .6462 |
| Sex | .049 | .063 | .5484 |
| NW v W | -.096 | -.044 | .5993 |
| N v O | .045 | .021 | .7979 |
| SES | .092 | .022 | .7870 |
| 1 v other | .089 | .129 | .1148 |
| 2 v other | .102 | .135 | .0974 |
| D Pic. Arr. | -.021 | -.021 | .7998 |

Table 4 (continued)

| Model IVC | R = .228, p = .5594, | Inc. IVC-II | p = .2291 |
| --- | --- | --- | --- |
| Predictor | R(DV,IV) | partial r | p |
| Age | .007 | .044 | .6034 |
| Sex | .049 | .077 | .6483 |
| NW v W | -.096 | -.048 | .5675 |
| N v O | .045 | .020 | .8065 |
| SES | .092 | .010 | .8992 |
| 1 v other | .089 | .126 | .1234 |
| 2 v other | .102 | .138 | .0902 |
| D Bl. Des. | -.076 | -.076 | .6407 |

| Model IVD | R = .215, p = .5288, | Inc. IVD-II | p = .3253 |
| --- | --- | --- | --- |
| Predictor | R(DV,IV) | partial r | p |
| Age | .007 | .039 | .6444 |
| Sex | .049 | .061 | .5349 |
| NW v W | -.096 | -.042 | .6161 |
| N v O | .045 | .020 | .8066 |
| SES | .092 | .023 | .7770 |
| 1 v other | .089 | .131 | .1097 |
| 2 v other | .102 | .141 | .0840 |
| D Obj. Assem. | -.024 | -.010 | .8998 |

| Model IVE | R = .252, p = .2790, | Inc. IVE-II | p = .1038 |
| --- | --- | --- | --- |
| Predictor | R(DV,IV) | partial r | p |
| Age | .007 | .060 | .5220 |
| Sex | .049 | .103 | .2097 |
| NW v W | -.096 | -.049 | .5632 |

Table 4 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .045 | .032 | .6985 |
| SES | .092 | .032 | .7046 |
| 1 v other | .089 | .149 | .0675 |
| 2 v other | .102 | .166 | *.0409 |
| D Coding | -.042 | -.135 | .0984 |

Model IVF R = .241, p = .3497, Inc. IVF-II p = .1520

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .043 | .6077 |
| Sex | .049 | .091 | .2699 |
| NW v W | -.096 | -.052 | .5384 |
| N v O | .045 | .028 | .7316 |
| SES | .092 | .038 | .6544 |
| 1 v other | .089 | .145 | .0745 |
| 2 v other | .102 | .145 | .0739 |
| D Pic. Comp. | .034 | .111 | .1760 |

Model V R = .271, p = .1834, Inc. V-II p = *.0386

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .047 | .5738 |
| Sex | .049 | .048 | .5701 |
| NW v W | -.096 | -.084 | .3122 |
| N v O | .045 | .036 | .6673 |
| SES | .092 | .059 | .5142 |
| 1 v other | .089 | .151 | .0627 |
| 2 v other | .102 | .102 | .2148 |
| FSIQ | -.097 | -.168 | *.0388 |

Table 4 (continued)

Model VI  R = .279, p = .1489,  Inc. VI-II  p = *.0386

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .061 | .5340 |
| Sex | .049 | .061 | .5330 |
| NW v W | -.096 | -.107 | .1937 |
| N v O | -.045 | .063 | .5445 |
| SES | .092 | .071 | .6052 |
| 1 v other | .089 | .157 | .0533 |
| 2 v other | .102 | .094 | .2570 |
| VIQ | -.070 | -.181 | *.0258 |

Model VII  R = .244, p = .3313,  Inc. VII-II  p = .1385

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .035 | .6728 |
| Sex | .049 | .047 | .5793 |
| NW v W | -.096 | -.051 | .5490 |
| N v O | .045 | .012 | .8837 |
| SES | .092 | .036 | .6641 |
| 1 v other | .089 | .138 | .0895 |
| 2 v other | .102 | .123 | .1336 |
| PIQ | -.106 | -.117 | .1521 |

Model VIII  R = .218, p = .5094,  Inc. VIII-II  p = .3022

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .043 | .6124 |
| Sex | .049 | .065 | .5621 |
| NW v W | -.096 | -.050 | .5516 |

Table 4 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .045 | .028 | .7332 |
| SES | .092 | .027 | .7438 |
| 1 v other | .089 | .133 | .1042 |
| 2 v other | .102 | .138 | .0909 |
| VIQ-PIQ | .035 | .036 | .6653 |

Model IX R = .258, p = .2486, Inc. IX-II p = .0859

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .052 | .5369 |
| Sex | .049 | .049 | .5604 |
| NW v W | -.096 | -.095 | .2476 |
| N v O | .045 | .053 | .5284 |
| SES | .092 | .060 | .5244 |
| 1 v other | .089 | .151 | .0631 |
| 2 v other | .102 | .091 | .2723 |
| F Verb | -.051 | -.145 | .0750 |

Model X R = .312, p = .0532, Inc. X-II p = **.0092

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .083 | .3151 |
| Sex | .049 | .117 | .1540 |
| NW v W | -.096 | -.081 | .6711 |
| N v O | .045 | .041 | .6264 |
| SES | .092 | .064 | .5548 |
| 1 v other | .089 | .169 | *.0375 |
| 2 v other | .102 | .167 | *.0398 |
| F Attn | -.115 | -.232 | **.0048 |

Table 4 (continued)

Model XI  R = .221, p = .5108,  Inc. XI-II  p = .2791

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .034 | .6852 |
| Sex | .049 | .045 | .5939 |
| NW v W | -.096 | -.043 | .6114 |
| N v O | .045 | .012 | .8807 |
| SES | .092 | .027 | .7438 |
| 1 v other | .089 | .133 | .1035 |
| 2 v other | .102 | .133 | .1037 |
| F Perf | -.067 | -.051 | .5434 |

Model XII  R = .323, p = .0901,  Inc. XII-II  p = *.0271

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .007 | .098 | .2385 |
| Sex | .049 | .129 | .1172 |
| NW v W | -.096 | -.100 | .2265 |
| N v O | .045 | .067 | .5747 |
| SES | .092 | .074 | .6235 |
| 1 v other | .089 | .176 | *.0317 |
| 2 v other | .102 | .147 | .0728 |
| F Verb | -.051 | -.055 | .5176 |
| F Attn | -.115 | -.201 | *.0142 |
| F Perf | -.067 | -.083 | .6790 |

*p <.05; **p <.01; ***p <.001

Table 5

Multiple, Partial, and Zero-Order Correlations for Alertness-Intelligence Models

Model I R = .068, p = .7086

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .020 | .8026 |
| Sex | .065 | .064 | .5650 |

Model II R = .235, p = .1292, Inc. II-I p = *0500

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .018 | .8184 |
| Sex | .065 | .083 | .3103 |
| NW v W | -.166 | -.039 | .6366 |
| N v O | -.131 | -.082 | .3184 |
| SES | .190 | .128 | .1142 |

Model III R = .468, p = ***.0004, Inc. III-II p = ***.0004

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .056 | .5152 |
| Sex | .065 | .122 | .1400 |
| NW v W | -.166 | -.038 | .6540 |
| N v O | -.131 | -.073 | .6104 |
| SES | .190 | .040 | .6366 |
| 1 v other | .142 | .028 | .7363 |
| 2 v other | -.173 | -.044 | .6044 |
| Information | .387 | .167 | *.0424 |
| Comprehension | .352 | .101 | .2248 |
| Pic. Comp. | .273 | .147 | .0747 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Pic. Arr. | .278 | .015 | .8543 |
| Vocabulary | .334 | .000 | .9914 |

Model IIIA R = .433, p = ***.0002, Inc. IIIA-II p = ***.0001

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .079 | .6600 |
| Sex | .065 | .063 | .5447 |
| NW v W | -.166 | -.059 | .5162 |
| N v O | -.131 | -.102 | .2162 |
| SES | .190 | .024 | .7730 |
| 1 v other | .142 | .022 | .7910 |
| 2 v other | -.173 | -.086 | .2966 |
| Information | .387 | .344 | ***.0001 |

Model IIIB R = .385, p = **.0027, Inc. IIIB-II p = **.0020

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .031 | .7067 |
| Sex | .065 | .098 | .2321 |
| NW v W | -.166 | -.002 | .9798 |
| N v O | -.131 | -.067 | .5754 |
| SES | .190 | .070 | .5943 |
| 1 v other | .142 | .047 | .5806 |
| 2 v other | -.173 | -.035 | .6797 |
| Comprehension | .352 | .275 | **.0010 |

Table 5 (continued)

Model IIIC R = .377, p = **.0039 Inc. IIIC-II p = **.0030

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .057 | .5000 |
| Sex | .065 | .104 | .2043 |
| NW v W | -.166 | -.040 | .6372 |
| N v O | -.131 | -.082 | .6764 |
| SES | .190 | .065 | .5627 |
| 1 v other | .142 | .020 | .8029 |
| 2 v other | -.173 | -.048 | .5700 |
| Vocabulary | .334 | .262 | **.0016 |

Model IIID R = .345, p = *.0155 Inc. IIID-II p = *.0162

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .039 | .6432 |
| Sex | .065 | .064 | .5557 |
| NW v W | -.166 | -.039 | .6445 |
| N v O | -.131 | -.023 | .7820 |
| SES | .190 | .106 | .1946 |
| 1 v other | .142 | .002 | .9779 |
| 2 v other | -.173 | -.086 | .2986 |
| Pic. Arr. | .278 | .210 | *.0102 |

Model IIIE R = .392, p = **.0019 Inc. IIIE-II p = **.0014

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .025 | .7599 |
| Sex | .065 | .146 | .0720 |
| NW v W | -.166 | -.073 | .6204 |
| N v O | -.131 | -.014 | .8609 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| SES | .190 | .123 | .1312 |
| 1 v other | .142 | .014 | .8587 |
| 2 v other | -.173 | -.099 | .2273 |
| Pic. Comp. | .273 | .285 | ***.0007 |

Model IV R = .299, p = .3174 Inc. IV-II p = .6209

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .029 | .7333 |
| Sex | .065 | .082 | .6680 |
| NW v W | -.166 | -.080 | .6561 |
| N v O | -.131 | -.008 | .9208 |
| SES | .190 | .119 | .1530 |
| 1 v other | .142 | .017 | .8376 |
| 2 v other | -.173 | -.131 | .1136 |
| D Information | .040 | .064 | .5512 |
| D Comprehension | .013 | .011 | .8929 |
| D Vocabulary | .042 | .017 | .8340 |
| D Pic. Comp. | -.002 | -.076 | .6328 |
| D Pic. Arr. | .012 | .034 | .6878 |

Model IVA R = .287, p = .1187 Inc. IVA-II p = .2303

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .036 | .6707 |
| Sex | .065 | .062 | .5404 |
| NW v W | -.166 | -.091 | .5700 |
| N v O | -.131 | -.021 | .7992 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| SES | .190 | .110 | .1793 |
| 1 v other | .142 | .010 | .9021 |
| 2 v other | -.173 | -.135 | .0988 |
| D Information | .040 | .064 | .5543 |

Model IVB R = .280 p = .1420, Inc. IVB-II p = .2939

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .037 | .6631 |
| Sex | .065 | .064 | .5511 |
| NW v W | -.166 | -.069 | .5936 |
| N v O | -.131 | -.017 | .8344 |
| SES | .190 | .114 | .1636 |
| 1 v other | .142 | .005 | .9494 |
| 2 v other | -.173 | -.126 | .1216 |
| D Comprehension | .013 | .011 | .8852 |

Model IVC R = .280 p = .1419, Inc. IVC-II p = .2936

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .035 | .6724 |
| Sex | .065 | .062 | .5412 |
| NW v W | -.166 | -.072 | .6098 |
| N v O | -.131 | -.015 | .8497 |
| SES | .190 | .115 | .1608 |
| 1 v other | .142 | .004 | .9649 |
| 2 v other | -.173 | -.127 | .1196 |
| D Vocabulary | .042 | .012 | .8785 |

Table 5 (continued)

Model IVD R = .296, p = .1084, Inc. IVD-II p = .2036

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .032 | .7055 |
| Sex | .065 | .086 | .2983 |
| NW v W | -.166 | -.078 | .6496 |
| N v O | -.131 | -.010 | .9023 |
| SES | .190 | .125 | .1275 |
| 1 v other | .142 | .015 | .8518 |
| 2 v other | -.173 | -.124 | .1281 |
| D Pic. Comp. | -.002 | -.078 | .6512 |

Model IVE R = .282, p = .1355, Inc. IVE-II p = .2755

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .034 | .6857 |
| Sex | .065 | .070 | .6003 |
| NW v W | -.166 | -.075 | .6317 |
| N v O | -.131 | .013 | .8725 |
| SES | .190 | .114 | .1649 |
| 1 v other | .142 | .001 | .9831 |
| 2 v other | -.173 | -.131 | .1083 |
| D Pic. Arr. | .012 | .034 | .6806 |

Model V R = .467, p = ***.0000, Inc. V-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .060 | .5268 |
| Sex | .065 | .105 | .2017 |
| NW v W | -.166 | -.032 | .7030 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | -.131 | -.061 | .5296 |
| SES | .190 | .033 | .6952 |
| 1 v other | .142 | .047 | .5777 |
| 2 v other | -.173 | -.042 | .6176 |
| FSIQ | .445 | .389 | ***.0000 |

Model VI R = .444, p = ***.0001, Inc. VI-II p = ***.0001

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .085 | .3031 |
| Sex | .065 | .072 | .6128 |
| NW v W | -.166 | -.071 | .6012 |
| N v O | -.131 | -.109 | .1820 |
| SES | .190 | .017 | .8321 |
| 1 v other | .142 | .052 | .5409 |
| 2 v other | -.173 | -.037 | .6565 |
| VIQ | .411 | .359 | ***.0000 |

Model VII R = .419, p = ***.0005, Inc. VII-II p = ***.0003

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .002 | .029 | .7265 |
| Sex | .065 | .110 | .1804 |
| NW v W | -.166 | -.050 | .5533 |
| N v O | -.131 | -.003 | .9678 |
| SES | .190 | .081 | .6714 |
| 1 v other | .142 | .018 | .8252 |
| 2 v other | -.173 | -.082 | .6800 |
| PIQ | .378 | .325 | ***.0001 |

Table 5 (continued)

Model VIII R = .282, p = .1366, Inc. VIII-II p = .2787

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .030 | .7162 |
| Sex | .065 | .070 | .5945 |
| NW v W | -.166 | -.077 | .6437 |
| N v O | -.131 | -.007 | .9318 |
| SES | .190 | .118 | .1496 |
| 1 v other | .142 | .006 | .9411 |
| 2 v other | -.173 | -.129 | .1141 |
| VIQ-PIQ | .051 | .032 | .7044 |

Model IX R = .427, p = ***.0003, Inc. IX-II p = ***.0002

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .071 | .6029 |
| Sex | .065 | .099 | .2280 |
| NW v W | -.166 | -.068 | .5852 |
| N v O | -.131 | -.102 | .2170 |
| SES | .190 | .026 | .7504 |
| 1 v other | .142 | .048 | .5709 |
| 2 v other | -.173 | -.019 | .8106 |
| F Verb | .394 | .336 | ***.0001 |

Model X R = .465, p = ***.0000, Inc. X-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .116 | .1562 |
| Sex | .065 | .030 | .7198 |
| NW v W | -.166 | -.008 | .9217 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | -.131 | -.056 | .5026 |
| SES | .190 | .051 | .5455 |
| 1 v other | .142 | .062 | .5421 |
| 2 v other | -.173 | -.178 | *.0283 |
| F Attn | .404 | .386 | ***.0000 |

Model XI   R = .388, p = **.0023,   Inc. XI-II  p = **.0017

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .014 | .8591 |
| Sex | .065 | .143 | .0791 |
| NW v W | -.166 | -.068 | .5861 |
| N v O | -.131 | -.020 | .8023 |
| SES | .190 | .095 | .2494 |
| 1 v other | .142 | .010 | .9037 |
| 2 v other | -.173 | -.093 | .2579 |
| F Perf | .307 | .279 | ***.0009 |

Model XII  R = .492, p = ***.0000,  Inc. XII-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .022 | .102 | .2173 |
| Sex | .065 | .034 | .6894 |
| NW v W | -.166 | -.042 | .6206 |
| N v O | -.131 | -.074 | .6184 |
| SES | .190 | .020 | .8030 |
| 1 v other | .142 | .072 | .6073 |
| 2 v other | -.173 | -.094 | .2605 |

Table 5 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| F Verb | .394 | .142 | .8024 |
| F Attn | .404 | .234 | **.0046 |
| F Perf | .307 | .067 | .5724 |

*$p < .05$; **$p < .01$; ***$p < .001$

Table 6

Multiple, Partial, and Zero-Order Correlations for Defiance-Hostility

Model I  R = .093, p = .5242

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .056 | .5063 |
| Sex | .074 | .071 | .6165 |

Model II  R = .184, p = .3949,  Inc. II-I  p = .2765

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .086 | .2917 |
| Sex | .074 | .082 | .3167 |
| NW v W | .033 | .000 | .9912 |
| N v O | .134 | .145 | .0710 |
| SES | .020 | .036 | .6620 |

Model III  R = .205, p = .8516,  Inc. II-II  p = .9743

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .084 | .3132 |
| Sex | .074 | .075 | .6244 |
| NW v W | .033 | .006 | .9383 |
| N v O | .134 | .105 | .2081 |
| SES | .020 | .044 | .6020 |
| 1 v other | -.047 | -.024 | .7754 |
| 2 v other | .094 | .033 | .6988 |
| Comprehension | -.049 | -.002 | .9820 |
| Similarities | -.032 | -.002 | .9753 |
| Picture Comp. | -.100 | -.037 | .6636 |
| Picture Arr. | -.060 | -.012 | .8851 |

Table 6 (continued)

| Model IIIA R = .199, p = .6475, | Inc. IIIA-II p = .8342 | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .059 | .087 | .2959 |
| Sex | .074 | .089 | .2824 |
| NW v W | .033 | .005 | .9534 |
| N v O | .134 | .113 | .1672 |
| SES | .020 | .048 | .5722 |
| 1 v other | -.047 | -.019 | .8116 |
| 2 v other | .094 | .035 | .6798 |
| Comprehension | -.049 | -.022 | .7897 |

| Model IIIB R = .199, p = .6491, | Inc. IIIB-II p = .8376 | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .059 | .089 | .2835 |
| Sex | .074 | .091 | .2714 |
| NW v W | .033 | .004 | .9576 |
| N v O | .134 | .113 | .1691 |
| SES | .020 | .048 | .5707 |
| 1 v other | -.047 | -.021 | .7987 |
| 2 v other | .094 | .037 | .6559 |
| Similarities | -.032 | -.019 | .8110 |

| Model IIIC R = .204, p = .6086, | Inc. IIIC-II p = .7542 | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .059 | .085 | .3052 |
| Sex | .074 | .074 | .6246 |
| NW v W | .033 | .010 | .8974 |

Table 6 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .134 | .105 | .2001 |
| SES | .020 | .044 | .6015 |
| 1 v other | -.047 | -.025 | .7588 |
| 2 v other | .094 | .038 | .6533 |
| Pic. Comp. | -.100 | -.053 | .5315 |

Model IIID R = .201, p = .6306, Inc. IIID-II p = .7984

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .088 | .2901 |
| Sex | .074 | .092 | .2635 |
| NW v W | .033 | .004 | .9580 |
| N v O | .134 | .112 | .1712 |
| SES | .020 | .047 | .5809 |
| 1 v other | -.047 | -.023 | .7772 |
| 2 v other | .094 | .035 | .6731 |
| Pic. Arr. | -.060 | -.039 | .6448 |

Model IV R = .288, p = .3098, Inc. IV-II p = .2727

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .107 | .1975 |
| Sex | .074 | .128 | .1199 |
| NW v W | .033 | .003 | .9299 |
| N v O | .134 | .122 | .1388 |
| SES | .020 | .059 | .5103 |
| 1 v other | -.047 | -.027 | .7496 |
| 2 v other | .094 | .109 | .1901 |

Table 6 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| D Comprehension | .057 | .142 | .0846 |
| D Similarities | .081 | .149 | .0703 |
| D Pic. Comp. | .016 | .091 | .2740 |
| D Pic. Arr. | .075 | .081 | .6631 |

Model IVA R = .232, p = .4098, Inc. IVA-II p = .3816

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .109 | .1824 |
| Sex | .074 | .110 | .1814 |
| NW v W | .033 | .001 | .9847 |
| N v O | .134 | .114 | .1657 |
| SES | .020 | .052 | .5389 |
| 1 v other | -.047 | -.037 | .6625 |
| 2 v other | .094 | .071 | .6036 |
| D Comprehension | .057 | .124 | .1292 |

Model IVB R = .227, p = .5546, Inc. IVB-II p = .5600

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .081 | .6690 |
| Sex | .074 | .097 | .2396 |
| NW v W | .033 | .013 | .8743 |
| N v O | .134 | .118 | .1484 |
| SES | .020 | .038 | .6540 |
| 1 v other | -.047 | -.028 | .7310 |
| 2 v other | .094 | .058 | .5099 |
| D Similarities | .081 | .114 | .1645 |

Table 6 (continued)

Model IVC  R = .205, p = .6037,  Inc. IVC-II  p = .7439

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .089 | .2790 |
| Sex | .074 | .104 | .2061 |
| NW v W | .033 | .005 | .9472 |
| N v O | .134 | .116 | .1579 |
| SES | .020 | .052 | .5395 |
| 1 v other | -.047 | -.015 | .8466 |
| 2 v other | .094 | .046 | .5850 |
| D Pic. Comp. | .016 | .055 | .5101 |

Model IVD  R = .210, p = .5691,  Inc. IVD-II  p = .6732

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .085 | .3071 |
| Sex | .074 | .080 | .6666 |
| NW v W | .033 | .020 | .8017 |
| N v O | .134 | .103 | .2100 |
| SES | .020 | .047 | .5766 |
| 1 v other | -.047 | -.018 | .8192 |
| 2 v other | .094 | .055 | .5116 |
| D Pic. Arr. | .075 | .072 | .6098 |

Model V  R = .241, p = .3464,  Inc. V-II  p = .2880

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .095 | .2485 |
| Sex | .074 | .081 | .6708 |

Table 6 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | .033 | .026 | .7529 |
| N v O | .134 | .126 | .1233 |
| SES | .020 | .074 | .6271 |
| 1 v other | -.047 | -.006 | .9389 |
| 2 v other | .094 | .012 | .8838 |
| FSIQ | -.137 | -.141 | .0827 |

Model VI R = .236, p = .3838, Inc. VI-II p = .3417

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .103 | .2087 |
| Sex | .074 | .092 | .2654 |
| NW v W | .033 | .039 | .6441 |
| N v O | .134 | .140 | .0858 |
| SES | .020 | .078 | .6543 |
| 1 v other | -.047 | -.004 | .9582 |
| 2 v other | .094 | .010 | .8994 |
| VIQ | -.098 | -.131 | .1080 |

Model VII R = .227, p = .5560, Inc. VII-II p = .5623

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .085 | .3062 |
| Sex | .074 | .078 | .6517 |
| NW v W | .033 | .002 | .9784 |
| N v O | .134 | .105 | .2019 |
| SES | .020 | .058 | .5090 |
| 1 v other | -.047 | -.016 | .8392 |

Table 6 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 2 v other | .094 | .026 | .7480 |
| PIQ | -.145 | -.114 | .1630 |

Model VIII R = .198, p = .6546, Inc. VIII-II p = .8487

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .085 | .3044 |
| Sex | .074 | .090 | .2760 |
| NW v W | .033 | .012 | .8820 |
| N v O | .134 | .105 | .2027 |
| SES | .020 | .043 | .6065 |
| 1 v other | -.047 | -.024 | .7710 |
| 2 v other | .094 | .044 | .6005 |
| VIQ-PIQ | .046 | .007 | .9327 |

Model IX R = .222, p = .5199, Inc. IX-II p = .5005

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .097 | .2404 |
| Sex | .074 | .083 | .3154 |
| NW v W | .033 | .031 | .7125 |
| N v O | .134 | .133 | .1036 |
| SES | .020 | .070 | .5985 |
| 1 v other | -.047 | -.008 | .9086 |
| 2 v other | .094 | .010 | .9014 |
| F Verb | -.089 | -.103 | .2081 |

Table 6 (continued)

Model X R = .272, p = .1749, Inc. X-II p = .0983

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .123 | .1314 |
| Sex | .074 | .136 | .0950 |
| NW v W | .033 | .021 | .7928 |
| N v O | .134 | .130 | .1104 |
| SES | .020 | .078 | .6537 |
| 1 v other | -.047 | -.007 | .9255 |
| 2 v other | .094 | .064 | .5566 |
| F Attn | -.123 | -.191 | *.0188 |

Model XI R = .224, p = .5310, Inc. XI-II p = .5190

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .079 | .6581 |
| Sex | .074 | .060 | .5259 |
| NW v W | .033 | .008 | .9161 |
| N v O | .134 | .097 | .2379 |
| SES | .020 | .054 | .5233 |
| 1 v other | -.047 | -.018 | .8183 |
| 2 v other | .094 | .029 | .7227 |
| F Perf | -.157 | -.107 | .1930 |

Model XII R = .273, p = .3222, Inc. XII-II p = .2805

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .059 | .118 | .1535 |
| Sex | .074 | .117 | .1548 |

Table 6 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | .033 | .018 | .8232 |
| N v O | .134 | .119 | .1491 |
| SES | .020 | .076 | .6378 |
| 1 v other | -.047 | -.007 | .9333 |
| 2 v other | .094 | .056 | .5119 |
| F Verb | -.089 | -.001 | .9872 |
| F Attn | -.123 | -.149 | .0681 |
| F Perf | -.157 | -.018 | .8254 |

*p < .05; **p < .01; ***p < .001

Table 7

Multiple, Partial, and Zero-Order Correlations for Responsibility Models

Model I  R = .005, p = .9982

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.003 | .9647 |
| Sex | -.003 | -.003 | .9696 |

Model II  R = .120, p = .8230,  Inc. II-I  p = .5398

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.007 | .9324 |
| Sex | -.003 | -.016 | .8443 |
| NW v W | .034 | .096 | .2396 |
| N v O | -.068 | -.099 | .2227 |
| SES | .028 | .072 | .6142 |

Model III  R = .268, p = .2690,  Inc. III-II  p = .0660

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.002 | .9763 |
| Sex | -.003 | -.031 | .7086 |
| NW v W | .034 | .125 | .1226 |
| N v O | -.068 | -.087 | .2928 |
| SES | .028 | .023 | .7808 |
| 1 v other | .147 | .066 | .5674 |
| 2 v other | -.163 | -.002 | .9794 |
| Comprehension | .194 | .119 | .1475 |
| Picture Arr. | .160 | .086 | .3024 |

Table 7 (continued)

Model IIIA R = .255, p = .2623, Inc. IIIA-II p = .0509

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.000 | .9920 |
| Sex | -.003 | -.026 | .7490 |
| NW v W | .034 | .119 | .1446 |
| N v O | -.068 | -.090 | .2738 |
| SES | .028 | .022 | .7887 |
| 1 v other | .147 | .061 | .5315 |
| 2 v other | -.163 | -.009 | .9109 |
| Comprehension | .194 | .158 | .0517 |

Model IIIB R = .242, p = .3415, Inc. IIIB-II p = .0800

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.005 | .9484 |
| Sex | -.003 | -.046 | .5892 |
| NW v W | .034 | .103 | .2112 |
| N v O | -.068 | -.067 | .5750 |
| SES | .028 | .043 | .6136 |
| 1 v other | .147 | .089 | .2814 |
| 2 v other | -.163 | -.035 | .6736 |
| Pic. Arr. | .160 | .135 | .0970 |

Model IV R = .208, p = .6808, Inc. IV-II p = .3601

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.004 | .9604 |
| Sex | -.003 | -.037 | .6594 |
| NW v W | .034 | .076 | .6362 |

Table 7 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | -.068 | -.058 | .5041 |
| SES | .028 | .047 | .5797 |
| 1 v other | .147 | .087 | .2954 |
| 2 v other | -.163 | -.071 | .6027 |
| D Comprehension | .054 | .013 | .8705 |
| D Pic. Arr. | -.039 | -.047 | .5826 |

Model IVA R = .203, p = .6158, Inc. IVA-II p = .2547

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.006 | .9376 |
| Sex | -.003 | -.045 | .5933 |
| NW v W | .034 | .083 | .3139 |
| N v O | -.068 | -.063 | .5465 |
| SES | .028 | .048 | .5676 |
| 1 v other | .147 | .091 | .2723 |
| 2 v other | -.163 | -.065 | .5603 |
| D Comprehension | .054 | .017 | .8376 |

Model IVB R = .208, p = .5824, Inc. IVB-II p = .2251

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.002 | .9827 |
| Sex | -.003 | -.036 | .6717 |
| NW v W | .034 | .075 | .6316 |
| N v O | -.068 | -.057 | .5035 |
| SES | .028 | .048 | .5723 |
| 1 v other | .147 | .086 | .2989 |

Table 7 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 2 v other | -.163 | -.070 | .5962 |
| D Pic. Arr. | -.039 | -.048 | .5726 |

Model V  R = .325, p = *.0341,  Inc. V-II  p = **.0030

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.018 | .8269 |
| Sex | -.003 | -.023 | .7785 |
| NW v W | .034 | .149 | .0676 |
| N v O | -.068 | -.092 | .2670 |
| SES | .028 | .007 | .9271 |
| 1 v other | .147 | .060 | .5212 |
| 2 v other | -.163 | -.004 | .9603 |
| FSIQ | .257 | .259 | **.0018 |

Model VI  R = .297, p = .0891,  Inc. VI-II  p = *.0100

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.032 | .7045 |
| Sex | -.003 | -.043 | .6078 |
| NW v W | .034 | .160 | *.0492 |
| N v O | -.068 | -.116 | .1550 |
| SES | .028 | .012 | .8835 |
| 1 v other | .147 | .058 | .5104 |
| 2 v other | -.163 | -.006 | .9389 |
| VIQ | .200 | .221 | **.0069 |

Table 7 (continued)

Model VII R = .301, p = .0771, Inc. VII-II p = **.0083

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.002 | .9770 |
| Sex | -.003 | -.016 | .8411 |
| NW v W | .034 | .101 | .2198 |
| N v O | -.068 | -.050 | .5509 |
| SES | .028 | .023 | .7787 |
| 1 v other | .147 | .077 | .6448 |
| 2 v other | -.163 | -.029 | .7273 |
| PIQ | .255 | .227 | **.0056 |

Model VIII R = .209, p = .5777, Inc. VIII-II p = .2212

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.004 | .9601 |
| Sex | -.003 | -.036 | .6666 |
| NW v W | .034 | .066 | .5654 |
| N v O | -.068 | -.046 | .5870 |
| SES | .028 | .055 | .5131 |
| 1 v other | .147 | .093 | .2621 |
| 2 v other | -.163 | -.066 | .5692 |
| VIQ-PIQ | -.051 | -.051 | .5490 |

Model IX R = .270, p = .1855, Inc. IX-II p = *.0291

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.021 | .7971 |
| Sex | -.003 | -.028 | .7333 |
| NW v W | .034 | .148 | .0698 |

Table 7 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | -.068 | -.106 | .1981 |
| SES | .028 | .000 | .9921 |
| 1 v other | .147 | .063 | .5481 |
| 2 v other | -.163 | -.004 | .9648 |
| F Verb | .178 | .182 | *.0249 |

Model X  R = .368, p = **.0056,  Inc. X-II  p = ***.0004

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.066 | .5689 |
| Sex | -.003 | -.122 | .1362 |
| NW v W | .034 | .138 | .0896 |
| N v O | -.068 | -.096 | .2438 |
| SES | .028 | .006 | .9388 |
| 1 v other | .147 | .041 | .6298 |
| 2 v other | -.163 | -.099 | .2275 |
| F Attn | .265 | .314 | ***.0002 |

Model XI  R = .277, p = .1566,  Inc. XI-II  p =*.0225

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.012 | .8814 |
| Sex | -.003 | -.010 | .8967 |
| NW v W | .034 | .087 | .2906 |
| N v O | -.068 | -.038 | .6490 |
| SES | .028 | .033 | .6898 |
| 1 v other | .147 | .082 | .6768 |

Table 7 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 2 v other | -.163 | -.037 | .6560 |
| F Perf | .222 | .192 | *.0181 |

Model XII R = .372, p = *.0151, Inc. XII-II p = **.0018

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.004 | -.056 | .5107 |
| Sex | -.003 | -.091 | .2767 |
| NW v W | .034 | .127 | .1224 |
| N v O | -.068 | -.083 | .3197 |
| SES | .028 | .008 | .9233 |
| 1 v other | .147 | .042 | .6247 |
| 2 v other | -.163 | -.079 | .6519 |
| F Verb | .178 | .008 | .9240 |
| F Attn | .265 | .238 | **.0041 |
| F Perf | .222 | .046 | .5850 |

*p < .05; **p < .01; ***p < .001

Table 8

Multiple, Partial, and Zero-Order Correlations for Learning Difficulty Models

Model I R = .099, p = .5239

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.025 | .7592 |
| Sex | -.096 | -.095 | .2392 |

Model II R = .120, p = .8239, Inc. II-I p = .8748

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.010 | .9019 |
| Sex | -.096 | -.100 | .2182 |
| NW v W | .051 | .060 | .5302 |
| N v O | .041 | .005 | .9493 |
| SES | -.001 | -.032 | .7027 |

Model III R = .461, p = ***.0003, Inc III-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.095 | .2562 |
| Sex | -.096 | -.029 | .7279 |
| NW v W | .051 | .032 | .7052 |
| N v O | .041 | .008 | .9164 |
| SES | -.001 | -.156 | .0571 |
| 1 v other | -.102 | -.092 | .2713 |
| 2 v other | .183 | .152 | .0639 |
| Information | -.305 | -.157 | .0565 |
| Vocabulary | -.275 | -.046 | .5930 |

Table 8 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Digit Span | -.240 | -.101 | .2260 |
| Coding | -.297 | -.223 | **.0069 |

Model IIIA R = .330, p = **.0017, Inc. IIIA-II p = ***.0001

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.059 | .5141 |
| Sex | -.096 | -.082 | .6787 |
| NW v W | .051 | .023 | .7815 |
| N v O | .041 | .008 | .9151 |
| SES | -.001 | -.136 | .0956 |
| 1 v other | -.102 | -.049 | .5580 |
| 2 v other | .183 | .130 | .1123 |
| Information | -.305 | -.334 | ***.0001 |

Model IIIB R = .348, p = *.0136, Inc. IIIB-II p = **.0010

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.039 | .6422 |
| Sex | -.096 | -.125 | .1257 |
| NW v W | .051 | .014 | .8635 |
| N v O | .041 | .003 | .9654 |
| SES | -.001 | -.099 | .2281 |
| 1 v other | -.102 | -.049 | .5574 |
| 2 v other | .183 | .085 | .3064 |
| Vocabulary | -.275 | -.275 | **.0010 |

Table 8 (continued)

Model IIIC R = .330, p =*.0277, Inc. IIIC-II p = **.0023

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.065 | .5623 |
| Sex | -.096 | -.037 | .6627 |
| NW v W | .051 | .063 | .5470 |
| N v O | .041 | .042 | .6160 |
| SES | -.001 | -.084 | .3133 |
| 1 v other | -.102 | -.045 | .5929 |
| 2 v other | .183 | .191 | *.0189 |
| Digit Span | -.240 | -.251 | **.0025 |

Model IIID R = .366, p = **.0062, Inc. IIID-II p = ***.0004

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.053 | .5307 |
| Sex | -.096 | -.031 | .7099 |
| NW v W | .051 | .079 | .6596 |
| N v O | .041 | .066 | .5670 |
| SES | -.001 | -.082 | .6801 |
| 1 v other | -.102 | -.073 | .6187 |
| 2 v other | .183 | .197 | *.0155 |
| Coding | -.297 | -.299 | ***.0004 |

Model IV R = .278, p = .3712, Inc. IV-II p = .1421

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.045 | .5995 |
| Sex | -.096 | -.022 | .7878 |
| NW v W | .051 | .083 | .6790 |
| N v O | .041 | .047 | .5808 |

Table 8 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| SES | -.001 | -.059 | .5152 |
| 1 v other | -.102 | -.036 | .6702 |
| 2 v other | .183 | .191 | *.0200 |
| D Information | -.021 | -.080 | .6578 |
| D Vocabulary | -.048 | -.038 | .6511 |
| D Digit Span | .070 | .020 | .8067 |
| D Coding | -.134 | -.159 | .0524 |

Model IVA R = .230, p = .4246, Inc. IVA-II p = .1186

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.017 | .8284 |
| Sex | -.096 | -.081 | .6695 |
| NW v W | .051 | .099 | .2300 |
| N v O | .041 | .068 | .5804 |
| SES | -.001 | -.048 | .5675 |
| 1 v other | -.102 | -.018 | .8256 |
| 2 v other | .183 | .173 | *.0331 |
| D Information | -.021 | -.060 | .5268 |

Model IVB R = .221, p = .5265, Inc. IVB-II p = .1462

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.016 | .8401 |
| Sex | -.096 | -.087 | .2958 |
| NW v W | .051 | .097 | .2402 |
| N v O | .041 | .069 | .5884 |

Table 8 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| SES | -.001 | -.044 | .6046 |
| 1 v other | -.102 | -.023 | .7815 |
| 2 v other | .183 | .160 | *.0487 |
| D Vocabulary | -.048 | -.019 | .8099 |

Model IVC  R = .223, p = .5225,  Inc. IVC-II  p = .1487

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.015 | .8474 |
| Sex | -.096 | -.084 | .3105 |
| NW v W | .051 | .100 | .2244 |
| N v O | .041 | .070 | .6002 |
| SES | -.001 | -.044 | .5994 |
| 1 v other | -.102 | -.024 | .7729 |
| 2 v other | .183 | .153 | .0593 |
| D Digit Span | .070 | .011 | .8934 |

Model IVD  R = .266, p = .2060,  Inc. IVD-II  p = *.0343

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.041 | .6250 |
| Sex | -.096 | -.030 | .7193 |
| NW v W | .051 | .097 | .2388 |
| N v O | .041 | .057 | .5005 |
| SES | -.001 | -.054 | .5224 |
| 1 v other | -.102 | -.044 | .5995 |
| 2 v other | .183 | .195 | *.0166 |
| D Coding | -.134 | -.149 | .0664 |

Table 8 (continued)

Model V  R = .406, p = **.0010,  Inc. V-II  p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.038 | .6546 |
| Sex | -.096 | -.119 | .1459 |
| NW v W | .051 | .014 | .8646 |
| N v O | .041 | .038 | .6502 |
| SES | -.001 | -.124 | .1299 |
| 1 v other | -.102 | -.070 | .5940 |
| 2 v other | .183 | .093 | .2590 |
| FSIQ | -.344 | -.348 | ***.0000 |

Model VI  R = .403, p = **.0011,  Inc. VI-II p = ***.0001

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.064 | .5515 |
| Sex | -.096 | -.091 | .2693 |
| NW v W | .051 | .032 | .7024 |
| N v O | .041 | .014 | .8557 |
| SES | -.001 | -.141 | .0831 |
| 1 v other | -.102 | -.077 | .6477 |
| 2 v other | .183 | .083 | .3167 |
| VIQ | -.325 | -.344 | ***.0000 |

Model VII  R = .346, p = *.0146,  Inc. VII-II  p = **.0011

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.011 | .8912 |
| Sex | -.096 | -.120 | .1411 |
| NW v W | .051 | .087 | .2944 |

Table 8 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .041 | .091 | .2709 |
| SES | -.001 | -.078 | .6524 |
| 1 v other | -.102 | -.042 | .6176 |
| 2 v other | .183 | .130 | .1104 |
| PIQ | -.286 | -.272 | **.0011 |

Model VIII R = .223, p = .5234, Inc. VIII-II p = .1481

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.019 | .8178 |
| Sex | -.096 | -.082 | .6772 |
| NW v W | .051 | .096 | .2453 |
| N v O | .041 | .065 | .5592 |
| SES | -.001 | -.045 | .5933 |
| 1 v other | -.102 | -.024 | .7690 |
| 2 v other | .183 | .165 | *.0418 |
| VIQ-PIQ | -.053 | -.013 | .8682 |

Model IX R = .398, p = **.0014, Inc. IX-II p = ***.0001

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.052 | .5380 |
| Sex | -.096 | -.119 | .1464 |
| NW v W | .051 | .038 | .6555 |
| N v O | .041 | .012 | .8807 |
| SES | -.001 | -.137 | .0930 |
| 1 v other | -.102 | -.077 | .6432 |
| 2 v other | .183 | .060 | .5213 |
| F Verb | -.319 | -.339 | ***.0001 |

Table 8 (continued)

Model X R = .416, p = ***.0006, Inc. X-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.091 | .2718 |
| Sex | -.096 | -.004 | .9635 |
| NW v W | .051 | .047 | .5789 |
| N v O | .041 | .041 | .6294 |
| SES | -.001 | -.112 | .1700 |
| 1 v other | -.102 | -.086 | .2997 |
| 2 v other | .183 | .215 | **.0086 |
| F Attn | -.335 | -.361 | ***.0000 |

Model XI R = .303, p = .0733, Inc. XI-II p = **.0077

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.001 | .9901 |
| Sex | -.096 | -.140 | .0859 |
| NW v W | .051 | .102 | .2166 |
| N v O | .041 | .100 | .2251 |
| SES | -.001 | -.063 | .5453 |
| 1 v other | -.102 | -.034 | .6856 |
| 2 v other | .183 | .141 | .0827 |
| F Perf | -.205 | -.211 | **.0098 |

Model XII R = .451, p = ***.0003, Inc. XII-II p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.092 | .2667 |
| Sex | -.096 | -.034 | .6868 |
| NW v W | .051 | .027 | .7432 |

Table 8 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .041 | .007 | .9349 |
| SES | -.001 | -.151 | .0661 |
| 1 v other | -.102 | -.102 | .2186 |
| 2 v other | .183 | .127 | .1235 |
| F Verb | -.319 | -.185 | *.0241 |
| F Attn | -.335 | -.224 | **.0066 |
| F Perf | -.205 | -.014 | .8613 |

*p < .05; **p < .01; ***p < .001

Table 9

Multiple, Partial, and Zero-Order Correlations for Tension Index Models

Model I R = .677, p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
| --- | --- | --- | --- |
| 1 v other | -.264 | -.592 | ***.0000 |
| 2 v other | -.408 | -.647 | ***.0000 |

Model II R = .679, p = ***.0000, Inc. II-I p = .7336

| Predictor | R(DV,IV) | partial r | p |
| --- | --- | --- | --- |
| 1 v other | -.264 | -.579 | ***.0000 |
| 2 v other | -.408 | -.632 | ***.0000 |
| Age | .197 | .059 | .5434 |
| Sex | .025 | .020 | .7949 |

Model III R = .691, p = ***.0000, Inc. III-II p = .1741

| Predictor | R(DV,IV) | partial r | p |
| --- | --- | --- | --- |
| 1 v other | -.264 | -.528 | ***.0000 |
| 2 v other | -.408 | -.548 | ***.0000 |
| Age | .197 | .063 | .5651 |
| Sex | .025 | .035 | .6610 |
| NW v W | .159 | .145 | .0623 |
| N v O | -.292 | -.155 | *.0456 |
| SES | -.157 | -.055 | .5066 |

Table 9 (continued)

Model IV  R = .717, p = ***.0000,  Inc. IV-III  p = **.0093

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.566 | ***.0000 |
| 2 v other | -.408 | -.479 | ***.0000 |
| Age | .197 | .055 | .5018 |
| Sex | .025 | .032 | .6908 |
| NW v W | .159 | .214 | **.0068 |
| N v O | -.292 | -.200 | *.0110 |
| SES | -.157 | -.003 | .9687 |
| Comprehension | .107 | .174 | *.0265 |
| Digit Span | -.061 | -.041 | .6165 |
| Coding | -.013 | -.014 | .2351 |

Model IVA  R = .713, p = ***.0000,  Inc. IVA-III p = **.0021

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.559 | ***.0000 |
| 2 v other | -.408 | -.479 | ***.0000 |
| Age | .197 | .080 | .3145 |
| Sex | .025 | .001 | .9893 |
| NW v W | .159 | .209 | **.0077 |
| N v O | -.292 | -.206 | **.0086 |
| SES | -.157 | -.013 | .8615 |
| Comprehension | .107 | .245 | **.0021 |

Model IVB  R = .699, p = ***.0000,  Inc. IVB-III p = .0589

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.539 | ***.0000 |
| 2 v other | -.408 | -.560 | ***.0000 |

Table 9 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .197 | .037 | .6454 |
| Sex | .025 | .020 | .5439 |
| NW v W | .159 | .167 | *.0320 |
| N v O | -.292 | -.170 | *.0289 |
| SES | -.157 | -.030 | .7029 |
| Digit Span | -.061 | -.147 | .0589 |

Model IVC R = .701, p = ***.0000, Inc. IVC-III p = *.0322

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.545 | ***.0000 |
| 2 v other | -.408 | -.562 | *** 0000 |
| Age | .197 | .041 | .6128 |
| Sex | .025 | .068 | .6026 |
| NW v W | .159 | .165 | *.0343 |
| N v O | -.292 | -.157 | *.0446 |
| SES | -.157 | -.036 | .6558 |
| Coding | -.013 | -.167 | *.0322 |

Model V R = .694, p = ***.0000, Inc. V-III p = .7091

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.523 | ***.0000 |
| 2 v other | -.408 | -.471 | ***.0000 |
| Age | .197 | .087 | .2731 |
| Sex | .025 | .004 | .9637 |
| NW v W | .159 | .141 | .0725 |
| N v O | -.292 | -.157 | *.0451 |
| SES | -.157 | -.063 | .5656 |

Table 9 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| D Comprehension | .117 | .068 | .5995 |
| D Digit Span | -.134 | -.031 | .6967 |
| D Coding | -.205 | -.051 | .5305 |

Model VA R = .693, p = ***.0000, Inc. VA-III p = .6283

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.531 | ***.0000 |
| 2 v other | -.408 | -.525 | ***.0000 |
| Age | .197 | .076 | .6614 |
| Sex | .025 | .024 | .7601 |
| NW v W | .159 | .140 | *.0722 |
| N v O | -.292 | -.158 | *.0423 |
| SES | -.157 | -.060 | .5440 |
| D Comprehension | .117 | .071 | .6283 |

Model VB R = .6916, p = ***.0000, Inc. VB-III p = .5321

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.529 | ***.0000 |
| 2 v other | -.408 | -.500 | ***.0000 |
| Age | .197 | .069 | .6138 |
| Sex | .025 | .019 | .8036 |
| NW v W | .159 | .152 | .0516 |
| N v O | -.292 | -.160 | *.0405 |
| SES | -.157 | -.053 | .5114 |
| D Digit Span | -.134 | -.050 | .5321 |

Table 9 (continued)

Model VC  R = .6913, p = ***.0000,  Inc. VC-III  p = .5931

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.519 | ***.0000 |
| 2 v other | -.408 | -.530 | ***.0000 |
| Age | .197 | .069 | .6111 |
| Sex | .025 | .018 | .8118 |
| NW v W | .159 | .143 | .0666 |
| N v O | -.292 | -.152 | .0508 |
| SES | -.157 | -.059 | .5366 |
| D Coding | -.205 | -.043 | .5932 |

Model VI  R = .726, p = ***.0000,  Inc. VI-III  p = ***.0002

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.566 | ***.0000 |
| 2 v other | -.408 | -.515 | ***.0000 |
| Age | .197 | .053 | .5141 |
| Sex | .025 | .005 | .9483 |
| NW v W | .159 | .232 | **.0034 |
| N v O | -.292 | -.190 | *.0149 |
| SES | -.157 | -.005 | .9463 |
| FSIQ | .147 | .309 | ***.0002 |

Model VII  R = .716, p = ***.0000,  Inc. VII-III  p = **.0012

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.560 | ***.0000 |
| 2 v other | -.408 | -.505 | ***.0000 |
| Age | .197 | .041 | .6086 |
| Sex | .025 | .022 | .7754 |

Table 9 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | .159 | .235 | **.0030 |
| N v O | -.292 | -.217 | **.0058 |
| SES | -.157 | -.019 | .8066 |
| VIQ | .049 | .259 | **.0012 |

Model VIII R = .720, p = ***.0000, Inc. VIII-III p = ***.0005

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.553 | ***.0000 |
| 2 v other | -.408 | -.537 | ***.0000 |
| Age | .197 | .067 | .6000 |
| Sex | .025 | .005 | .9482 |
| NW v W | .159 | .181 | *.0204 |
| N v O | -.292 | -.139 | .0738 |
| SES | -.157 | -.036 | .6534 |
| PIQ | .227 | .281 | ***.0005 |

Model IX R = .693, p = ***.0000, Inc. IX-III p = .3091

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.525 | ***.0000 |
| 2 v other | -.408 | -.552 | ***.0000 |
| Age | .197 | .070 | .6159 |
| Sex | .025 | .029 | .7140 |
| NW v W | .159 | .122 | .1196 |
| N v O | -.292 | -.125 | .1095 |
| SES | -.157 | -.069 | .6093 |
| VIQ-PIQ | -.189 | -.081 | .3091 |

Table 9 (continued)

Model X R = .691, p = ***.0000, Inc. X-III p = .9411

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.527 | ***.0000 |
| 2 v other | -.408 | -.548 | ***.0000 |
| Age | .197 | .062 | .5631 |
| Sex | .025 | .035 | .6621 |
| NW v W | .159 | .144 | .0645 |
| N v O | -.292 | -.155 | *.0462 |
| SES | -.157 | -.054 | .5025 |
| Scatter | -.065 | -.006 | .9414 |

Model XI R = .716, p = ***.0000, Inc. XI-III p = **.0012

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.559 | ***.0000 |
| 2 v other | -.408 | -.478 | ***.0000 |
| Age | .197 | .051 | .5292 |
| Sex | .025 | .000 | .9928 |
| NW v W | .159 | .240 | **.0025 |
| N v O | -.292 | -.218 | **.0055 |
| SES | -.157 | -.016 | .8328 |
| F Verb | .075 | .259 | **.0012 |

Model XII R = .706, p = ***.0000, Inc. XII-III p = **.0093

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.552 | ***.0000 |
| 2 v other | -.408 | -.570 | ***.0000 |
| Age | .197 | .023 | .7688 |

Table 9 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Sex | .025 | .083 | .2949 |
| NW v W | .159 | .180 | *.0207 |
| N v O | -.292 | -.169 | *.0297 |
| SES | -.157 | -.018 | .8122 |
| F Attn | -.044 | -.204 | **.0093 |

Model XIII  R = .716, p = ***.0000,  Inc. XIII-III  p = **.0012

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.546 | ***.0000 |
| 2 v other | -.408 | -.535 | ***.0000 |
| Age | .197 | .080 | .3159 |
| Sex | .025 | .028 | .7267 |
| NW v W | .159 | .164 | *.0357 |
| N v O | -.292 | -.129 | .0998 |
| SES | -.157 | -.047 | .5573 |
| F Perf | .245 | .260 | **.0012 |

Model XIV  R = .725, p = ***.0000,  Inc. XIV-III  p = **.0019

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| 1 v other | -.264 | -.560 | ***.0000 |
| 2 v other | -.408 | -.470 | ***.0000 |
| Age | .197 | .055 | .5023 |
| Sex | .025 | .012 | .8722 |
| NW v W | .159 | .214 | **.0067 |
| N v O | -.292 | -.173 | *.0269 |

Table 9 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| SES | -.157 | -.002 | .9780 |
| F Verb | .075 | .128 | .1050 |
| F Attn | -.044 | -.043 | .5956 |
| F Perf | .245 | .145 | .0655 |

*p < .05; **p < .01; ***p < .001

Table 10

Multiple, Partial, and Zero-Order Correlations for Quality of Schoolwork Models

Model I R = .134, p = .5394

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.002 | .9851 |
| S v other | .134 | .083 | .5542 |

Model II R = .144, p = .7766, Inc. II-I p = .8876

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.007 | .9501 |
| S v other | .134 | .670 | .5290 |
| Age | .032 | .022 | .8318 |
| Sex | .069 | .043 | .6968 |

Model III R = .224, p = .7421, Inc. III-II p = .5251

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.025 | .8186 |
| S v other | .134 | .046 | .6802 |
| Age | .032 | .034 | .7544 |
| Sex | .069 | .049 | .6651 |
| NW v W | .167 | .076 | .5019 |
| N v O | .126 | .101 | .6372 |
| SES | -.101 | -.003 | .9788 |

Model IV R = .485, p = .0574, Inc. IV-III p = **.0095

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.007 | .9468 |
| S v other | .134 | .069 | .5545 |

Table 10 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .032 | .088 | .5492 |
| Sex | .069 | .155 | .1729 |
| NW v W | .167 | .059 | .6155 |
| N v O | .126 | .184 | .1035 |
| SES | -.101 | -.143 | .2104 |
| 1 v other | -.058 | -.021 | .8501 |
| 2 v other | .015 | .049 | .6722 |
| Vocabulary | -.297 | -.047 | .6869 |
| Information | -.319 | -.104 | .6334 |
| Digit Span | -.298 | -.125 | .2760 |
| Coding | -.349 | -.227 | *.0432 |

Model IVA R = .374, p = .2537, Inc. IVA-III p = *.0474

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.105 | .7897 |
| S v other | .134 | .134 | .7304 |
| Age | .032 | .026 | .8134 |
| Sex | .069 | .042 | .7084 |
| NW v W | .167 | .051 | .6581 |
| N v O | .126 | .211 | .0550 |
| SES | -.101 | -.080 | .5149 |
| 1 v other | -.058 | -.062 | .5917 |
| 2 v other | .015 | .151 | .1742 |
| Vocabulary | -.297 | -.293 | **.0078 |

Table 10 (continued)

Model IVB R = 406, p = .1353, Inc. IVB-III p = *.0166

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.032 | .7738 |
| S v other | .134 | .091 | .5735 |
| Age | .032 | .058 | .6116 |
| Sex | .069 | .096 | .6032 |
| NW v W | .167 | .074 | .5165 |
| N v O | .126 | .217 | *.0484 |
| SES | -.101 | -.096 | .6026 |
| 1 v other | -.058 | -.067 | .5772 |
| 2 v other | .015 | .115 | .3071 |
| Information | -.319 | -.335 | **.0025 |

Model IVC R = 391, p = .1833, Inc. IVC-III p = *.0271

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.004 | .9674 |
| S v other | .134 | .084 | .5398 |
| Age | .032 | .068 | .5523 |
| Sex | .069 | .132 | .2378 |
| NW v W | .167 | .033 | .7702 |
| N v O | .126 | .134 | .2301 |
| SES | -.101 | -.082 | .5242 |
| 1 v other | -.058 | -.076 | .5434 |
| 2 v other | .015 | .029 | .7902 |
| Digit Span | -.298 | -.316 | **.0042 |

Table 10 (continued)

Model IVD  R = .420, p = .0976,  Inc. IVD-III  p = *.0101

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.032 | .7763 |
| S v other | .134 | .051 | .6532 |
| Age | .032 | .048 | .6740 |
| Sex | .069 | .149 | .1802 |
| NW v W | .167 | .003 | .9749 |
| N v O | .126 | .138 | .2166 |
| SES | -.101 | -.086 | .5483 |
| 1 v other | -.058 | -.018 | .8645 |
| 2 v other | .015 | .038 | .7363 |
| Coding | -.349 | -.353 | **.0016 |

Model V  R = .335, p = .7191,  Inc. V-III  p = .5076

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.034 | .7629 |
| S v other | .134 | .063 | .5914 |
| Age | .032 | .027 | .8096 |
| Sex | .069 | .164 | .1469 |
| NW v W | .167 | .029 | .7952 |
| N v O | .126 | .156 | .1699 |
| SES | -.101 | -.054 | .6463 |
| 1 v other | -.058 | -.062 | .5565 |
| 2 v other | .015 | .010 | .9265 |
| D Information | -.052 | -.123 | .2822 |
| D Digit Span | -.022 | -.148 | .1925 |
| D Coding | -.116 | -.171 | .1310 |
| D Vocabulary | -.088 | -.130 | .2545 |

Table 10 (continued)

Model VA R = .250, p = .8652, Inc. VA-III p = .7872

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.019 | .8572 |
| S v other | .134 | .069 | .5448 |
| Age | .032 | .009 | .9336 |
| Sex | .069 | .077 | .5009 |
| NW v W | .167 | .033 | .7661 |
| N v O | .126 | .139 | .2140 |
| SES | -.101 | -.007 | .9477 |
| 1 v other | -.058 | -.090 | .5674 |
| 2 v other | .015 | .080 | .5178 |
| D Information | -.052 | -.064 | .5799 |

Model VB R = .264, p = .8149, Inc. VB-III p = .6449

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.016 | .8820 |
| S v other | .134 | .080 | .5161 |
| Age | .032 | .020 | .8538 |
| Sex | .069 | .090 | .5694 |
| NW v W | .167 | .075 | .5102 |
| N v O | .126 | .111 | .6772 |
| SES | -.101 | -.026 | .8558 |
| 1 v other | -.058 | -.091 | .5753 |
| 2 v other | .015 | .045 | .6928 |
| D Digit Span | -.022 | -.108 | .6617 |

Table 10 (continued)

Model VC R = .280, p = .7496, Inc. VC-III p = .5025

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.034 | .7621 |
| S v other | .134 | .056 | .6283 |
| Age | .032 | .007 | .9487 |
| Sex | .069 | .120 | .2862 |
| NW v W | .167 | .047 | .6800 |
| N v O | .126 | .139 | .2139 |
| SES | -.101 | -.036 | .7472 |
| 1 v other | -.058 | -.053 | .6438 |
| 2 v other | .015 | .047 | .6776 |
| D Coding | -.116 | -.143 | .1995 |

Model VD R = .248, p = .8727, Inc. VD-III p = .8107

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.035 | .7569 |
| S v other | .134 | .055 | .6291 |
| Age | .032 | .005 | .9645 |
| Sex | .069 | .059 | .6057 |
| NW v W | .167 | .034 | .7619 |
| N v O | .126 | .139 | .2130 |
| SES | -.101 | -.011 | .9197 |
| 1 v other | -.058 | -.082 | .5271 |
| 2 v other | .015 | .095 | .5962 |
| D Vocabulary | -.088 | -.053 | .6449 |

Table 10 (continued)

Model VI R = .433, p = .0699, Inc. VI-III p = **.0063

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.004 | .9736 |
| S v other | .134 | .060 | .6003 |
| Age | .032 | .063 | .5818 |
| Sex | .069 | .047 | .6817 |
| NW v W | .167 | .047 | .6814 |
| N v O | .126 | .168 | .1304 |
| SES | -.101 | -.083 | .5332 |
| 1 v other | -.058 | -.053 | .6465 |
| 2 v other | .015 | .136 | .2246 |
| FSIQ | -.383 | -.369 | **.0010 |

Model VII R = .395, p = .1688, Inc. VII-III p = *.0236

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.001 | .9910 |
| S v other | .134 | .054 | .6389 |
| Age | .032 | .055 | .6290 |
| Sex | .069 | .072 | .5282 |
| NW v W | .167 | .043 | .7047 |
| N v O | .126 | .194 | .0795 |
| SES | -.101 | -.100 | .6214 |
| 1 v other | -.058 | -.046 | .6855 |
| 2 v other | .015 | .130 | .2453 |
| VIQ | -.324 | -.322 | **.0037 |

Table 10 (continued)

Model VIII R = .395, p = .1693, Inc. VII-III p = *.0238

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.018 | .8650 |
| S v other | .134 | .069 | .5494 |
| Age | .032 | .047 | .6800 |
| Sex | .069 | .036 | .7486 |
| NW v W | .167 | .005 | .9603 |
| N v O | .126 | .125 | .2670 |
| SES | -.101 | -.031 | .7779 |
| 1 v other | -.058 | -.076 | .5090 |
| 2 v other | .015 | .120 | .2870 |
| PIQ | -.350 | -.321 | **.0037 |

Model IX R = .251, p = .8631, Inc. IX-III p = .7808

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.029 | .7944 |
| S v other | .134 | .068 | .5559 |
| Age | .032 | .067 | .9513 |
| Sex | .069 | .058 | .6110 |
| NW v W | .167 | .052 | .6470 |
| N v O | .126 | .115 | .3087 |
| SES | -.101 | -.003 | .9797 |
| 1 v other | -.058 | -.089 | .5640 |
| 2 v other | .015 | .087 | .5549 |
| VIQ-PIQ | .039 | .066 | .5644 |

Table 10 (continued)

Model X  R = .376, p = .2428,  Inc. X-III  p = *.0439

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.001 | .9908 |
| S v other | .134 | .058 | .6162 |
| Age | .032 | .035 | .7521 |
| Sex | .069 | .051 | .6526 |
| NW v W | .167 | .048 | .6744 |
| N v O | .126 | .197 | .0741 |
| SES | -.101 | -.085 | .5717 |
| 1 v other | -.058 | -.052 | .6479 |
| 2 v other | .015 | .153 | .1701 |
| F Verb | -.303 | -.296 | **.0072 |

Model XI  R = .465, p = *.0276,  Inc. XI-III  p = ***.0019

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.006 | .9540 |
| S v other | .134 | .071 | .5381 |
| Age | .032 | .086 | .5473 |
| Sex | .069 | .178 | .1073 |
| NW v W | .167 | .003 | .9782 |
| N v O | .126 | .139 | .2135 |
| SES | -.101 | -.122 | .2786 |
| 1 v other | -.058 | -.024 | .8267 |
| 2 v other | .015 | .005 | .9638 |
| F Attn | -.380 | -.408 | ***.0003 |

Table 10 (continued)

Model XII R = .344, p = .4045, Inc. XII-III p = .1146

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.028 | .7984 |
| S v other | .134 | .062 | .5907 |
| Age | .032 | .021 | .8466 |
| Sex | .069 | .004 | .9688 |
| NW v W | .167 | .003 | .9740 |
| N v O | .126 | .118 | .2960 |
| SES | -.101 | -.008 | .9417 |
| 1 v other | -.058 | -.093 | .5837 |
| 2 v other | .015 | .119 | .2920 |
| F Perf | -.287 | -.251 | *.0225 |

Model XIII R = .468, p = .0621, Inc. XIII-III p = **.0089

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.105 | -.005 | .9650 |
| S v other | .134 | .068 | .5584 |
| Age | .032 | .083 | .5258 |
| Sex | .069 | .137 | .2278 |
| NW v W | .167 | .016 | .8870 |
| N v O | .126 | .140 | .2148 |
| SES | -.101 | -.117 | .3061 |
| 1 v other | -.058 | -.028 | .8034 |
| 2 v other | .015 | .030 | .7878 |
| F Verb | -.303 | -.039 | .7314 |
| F Attn | -.380 | -.276 | *.0133 |
| F Perf | -.287 | -.041 | .7183 |

*p < .05; **p < .01; ***p < .001

Table 11

Multiple, Partial, and Zero-Order Correlations for Attitude Towards School Models

Model I  R = .208, p = .1381

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.207 | *.0457 |
| S v other | .014 | .158 | .1320 |

Model II  R = .311, p = .0609,  Inc. II-I  p = .0788

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.192 | .0674 |
| S v other | .014 | .135 | .2043 |
| Age | .212 | .232 | *.0266 |
| Sex | -.078 | -.100 | .6462 |

Model III  R = .337, p = .1640,  Inc. III-II  p = .6652

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.160 | .1379 |
| S v other | .014 | .126 | .2456 |
| Age | .212 | .228 | *.0328 |
| Sex | -.078 | -.118 | .2794 |
| NW v W | .062 | .044 | .6915 |
| N v O | -.068 | -.061 | .5844 |
| SES | -.155 | -.087 | .5667 |

Model IV  R = .369, p = .4255,  Inc. IV-III  p = .8449

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.171 | .1228 |
| S v other | .014 | .127 | .2560 |

Table 11 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .212 | .196 | .0757 |
| Sex | -.078 | -.079 | .5075 |
| NW v W | .062 | .003 | .9786 |
| N v O | -.068 | -.015 | .8879 |
| SES | -.155 | -.065 | .5708 |
| 1 v other | -.072 | -.029 | .7945 |
| 2 v other | -.114 | -.075 | .5114 |
| Coding | -.178 | -.111 | .6741 |
| Information | -.108 | -.055 | .6338 |
| Vocabulary | -.105 | -.059 | .6101 |

Model IVA R = .347, p = .3645, Inc. IVA-III p = .8916

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.156 | .1562 |
| S v other | .014 | .103 | .6452 |
| Age | .212 | .202 | .0635 |
| Sex | -.078 | -.109 | .6746 |
| NW v W | .062 | .005 | .9612 |
| N v O | -.068 | -.003 | .9788 |
| SES | -.155 | -.080 | .5224 |
| 1 v other | -.072 | -.036 | .7466 |
| 2 v other | -.114 | -.086 | .5542 |
| Information | -.108 | -.019 | .8621 |

Table 11 (continued)

Model IVB R = .353, p = .3364, Inc. IVB-III p = .8108

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.161 | .1411 |
| S v other | .014 | .112 | .3132 |
| Age | .212 | .200 | .0657 |
| Sex | -.078 | -.115 | .3014 |
| NW v W | .062 | .011 | .9180 |
| N v O | -.068 | -.009 | .9340 |
| SES | -.155 | -.069 | .5441 |
| 1 v other | -.072 | -.033 | .7656 |
| 2 v other | -.114 | -.098 | .6162 |
| Vocabulary | -.105 | -.068 | .5491 |

Model IVC R = .364, p = .2800, Inc. IVC-III p = .6335

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.163 | .1372 |
| S v other | .014 | .116 | .2947 |
| Age | .212 | .207 | .0574 |
| Sex | -.078 | -.070 | .5351 |
| NW v W | .062 | .001 | .9914 |
| N v O | -.068 | -.012 | .9143 |
| SES | -.155 | -.067 | .5550 |
| 1 v other | -.072 | -.027 | .8040 |
| 2 v other | -.114 | -.069 | .5437 |
| Coding | -.178 | -.118 | .2884 |

Table 11 (continued)

Model V  R = .356, p = .5022,  Inc. V-III  p = .9448

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.167 | .1331 |
| S v other | .014 | .111 | .6746 |
| Age | .212 | .192 | .0817 |
| Sex | -.078 | -.132 | .2399 |
| NW v W | .062 | .008 | .9414 |
| N v O | -.068 | -.008 | .9453 |
| SES | -.155 | -.094 | .5920 |
| 1 v other | -.072 | -.046 | .6883 |
| 2 v other | -.114 | -.105 | .6481 |
| D Information | -.034 | -.031 | .7772 |
| D Vocabulary | -.056 | -.055 | .6313 |
| D Coding | -.070 | -.051 | .6551 |

Model VA  R = .348, p = .3615,  Inc. VA-III  p = .8834

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.162 | .1388 |
| S v other | .014 | .108 | .6678 |
| Age | .212 | .198 | .0697 |
| Sex | -.078 | -.112 | .3128 |
| NW v W | .062 | .019 | .8564 |
| N v O | -.068 | -.015 | .8845 |
| SES | -.155 | -.087 | .5593 |
| 1 v other | -.072 | -.038 | .7320 |
| 2 v other | -.114 | -.087 | .5612 |
| D Information | -.034 | -.028 | .7962 |

Table 11 (continued)

Model VB R = .352, p = .3391, Inc. VB-III p = .8190

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.165 | .1315 |
| S v other | .014 | .113 | .3083 |
| Age | .212 | .195 | .0737 |
| Sex | -.078 | -.121 | .2746 |
| NW v W | .062 | .001 | .9911 |
| N v O | -.068 | -.000 | .9952 |
| SES | -.155 | -.087 | .5607 |
| 1 v other | -.072 | -.039 | .7271 |
| 2 v other | -.114 | -.092 | .5894 |
| D Vocabulary | -.056 | -.065 | .5682 |

Model VC R = .351, p = .3453, Inc. VC-III p = .8373

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.159 | .1472 |
| S v other | .014 | .099 | .6251 |
| Age | .212 | .202 | .0638 |
| Sex | -.078 | -.125 | .2587 |
| NW v W | .062 | .013 | .9045 |
| N v O | -.068 | -.009 | .9353 |
| SES | -.155 | -.098 | .6171 |
| 1 v other | -.072 | -.045 | .6865 |
| 2 v other | -.114 | -.097 | .6136 |
| D Coding | -.070 | -.057 | .6158 |

Table 11 (continued)

Model VI R = .376, p = .2263, Inc. VI-III p = .5356

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.158 | .1498 |
| S v other | .014 | .113 | .3090 |
| Age | .212 | .212 | .0517 |
| Sex | -.078 | -.110 | .6754 |
| NW v W | .062 | .029 | .7905 |
| N v O | -.068 | -.012 | .9079 |
| SES | -.155 | -.054 | .6353 |
| 1 v other | -.072 | -.027 | .8019 |
| 2 v other | -.114 | -.110 | .6779 |
| FSIQ | -.166 | -.155 | .1581 |

Model VII R = .348, p = .3602, Inc. VII-III p = .8799

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.159 | .1477 |
| S v other | .014 | .107 | .6607 |
| Age | .212 | .203 | .0623 |
| Sex | -.078 | -.109 | .6703 |
| NW v W | .062 | .003 | .9774 |
| N v O | -.068 | -.001 | .9877 |
| SES | -.155 | -.073 | .5175 |
| 1 v other | -.072 | -.034 | .7598 |
| 2 v other | -.114 | -.089 | .5695 |
| VIQ | -.098 | -.031 | .7759 |

Table 11 (continued)

Model VIII  R = .401, p = .1372,  Inc. VIII-III  p = .2191

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.161 | .1410 |
| S v other | .014 | .112 | .3155 |
| Age | .212 | .214 | *.0487 |
| Sex | -.078 | -.121 | .2769 |
| NW v W | .062 | .021 | .8475 |
| N v O | -.068 | -.009 | .9321 |
| SES | -.155 | -.078 | .5108 |
| 1 v other | -.072 | -.039 | .7263 |
| 2 v other | -.114 | -.110 | .3212 |
| PIQ | -.187 | -.214 | *.0492 |

Model IX  R = .400, p = .1379,  Inc. IX-III  p = .2209

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.167 | .1270 |
| S v other | .014 | .101 | .6333 |
| Age | .212 | .204 | .0611 |
| Sex | -.078 | -.136 | .2178 |
| NW v W | .062 | .037 | .7409 |
| N v O | -.068 | -.055 | .6248 |
| SES | -.155 | -.136 | .2184 |
| 1 v other | -.072 | -.062 | .5860 |
| 2 v other | -.114 | -.080 | .7409 |
| VIQ-PIQ | .100 | .213 | *.0498 |

Table 11 (continued)

Model X  R = .349, p = .3553,  Inc. X-III  p = .8661

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.158 | .1496 |
| S v other | .014 | .107 | .6613 |
| Age | .212 | .202 | .0638 |
| Sex | -.078 | -.111 | .3185 |
| NW v W | .062 | .002 | .9825 |
| N v O | -.068 | -.003 | .9790 |
| SES | -.155 | -.072 | .5275 |
| 1 v other | -.072 | -.033 | .7631 |
| 2 v other | -.114 | -.093 | .5899 |
| F Verb | -.097 | -.041 | .7113 |

Model XI  R = .356, p = .3199,  Inc. XI-III  p = .7605

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.159 | .1486 |
| S v other | .014 | .110 | .6763 |
| Age | .212 | .210 | .0532 |
| Sex | -.078 | -.076 | .5007 |
| NW v W | .062 | .004 | .9700 |
| N v O | -.068 | -.009 | .9297 |
| SES | -.155 | -.065 | .5678 |
| 1 v other | -.072 | -.029 | .7918 |
| 2 v other | -.114 | -.070 | .5391 |
| F Attn | -.156 | -.085 | .5482 |

Table 11 (continued)

Model XII R = .389, p = .1742, Inc. XII-III p = .3129

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.169 | .1221 |
| S v other | .014 | .112 | .3134 |
| Age | .212 | .206 | .0581 |
| Sex | -.078 | -.145 | .1885 |
| NW v W | .062 | .017 | .8711 |
| N v O | -.068 | -.006 | .9583 |
| SES | -.155 | -.087 | .5606 |
| 1 v other | -.072 | -.048 | .6721 |
| 2 v other | -.114 | -.113 | .3115 |
| F Perf | -.135 | -.189 | .0832 |

Model XIII R = .392, p = .3015, Inc. XIII-III p = .5969

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.137 | -.172 | .1209 |
| S v other | .014 | .111 | .6734 |
| Age | .212 | .205 | .0634 |
| Sex | -.078 | -.128 | .2525 |
| NW v W | .062 | .000 | .9924 |
| N v O | -.068 | -.020 | .8521 |
| SES | -.155 | -.096 | .6014 |
| 1 v other | -.072 | -.053 | .6425 |
| 2 v other | -.114 | -.088 | .5585 |
| F Verb | -.097 | -.043 | .7019 |
| F Attn | -.156 | -.006 | .9588 |
| F Perf | -.135 | -.175 | .1135 |

*$p < .05$; **$p < .01$; ***$p < .001$

Table 12

Multiple, Partial, and Zero-Order Correlations for Relationship to Classmates Models

Model I  R = .253, p = *.0380

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.105 | .3003 |
| S v other | .231 | .064 | .5348 |

Model II  R = .268, p = .1241,  Inc. II-I  p = .6778

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.099 | .6678 |
| S v other | .231 | .070 | .5003 |
| Age | .070 | .077 | .5435 |
| Sex | -.028 | -.060 | .5667 |

Model III  R = .320, p = .1699,  Inc. III-II  p = .3669

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.096 | .6427 |
| S v other | .231 | .094 | .6319 |
| Age | .070 | .060 | .5708 |
| Sex | -.028 | -.051 | .6286 |
| NW v W | -.024 | -.167 | .1012 |
| N v O | -.012 | -.088 | .5962 |
| SES | -.124 | -.148 | .1484 |

Model IV  R = .356, p = .3143,  Inc. IV-III  p = .6519

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.074 | .5079 |
| S v other | .231 | .108 | .3068 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .070 | .061 | .5733 |
| Sex | -.028 | -.052 | .6284 |
| NW v W | -.024 | -.195 | .0601 |
| N v O | -.012 | -.103 | .6681 |
| SES | -.124 | -.140 | .1818 |
| 1 v other | .011 | .009 | .9285 |
| 2 v other | -.013 | -.097 | .6354 |
| Comprehension | -.140 | -.048 | .6529 |
| Pic. Arr. | -.140 | -.109 | .3034 |

Model IVA R = .341, p = .3105, Inc. IVA-III p = .7083

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.087 | .5871 |
| S v other | .231 | .101 | .6621 |
| Age | .070 | .035 | .7367 |
| Sex | -.028 | -.056 | .6033 |
| NW v W | -.024 | -.187 | .0700 |
| N v O | -.012 | -.122 | .2441 |
| SES | -.124 | -.135 | .1952 |
| 1 v other | .011 | .006 | .9537 |
| 2 v other | -.013 | -.096 | .6358 |
| Comprehension | -.140 | -.094 | .6257 |

Model IVB R = .353, p = .2506, Inc. IVB-III p = .5196

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.077 | .5256 |
| S v other | .231 | .112 | .2891 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .070 | .069 | .5189 |
| Sex | -.028 | -.047 | .6576 |
| NW v W | -.024 | -.193 | .0621 |
| N v O | -.012 | -.097 | .6397 |
| SES | -.124 | -.149 | .1521 |
| 1 v other | .011 | .017 | .8685 |
| 2 v other | -.013 | -.088 | .5901 |
| Pic. Arr. | -.140 | -.136 | .1941 |

Model V R = .343, p = .3863, Inc. V-III p = .8217

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.094 | .6223 |
| S v other | .231 | .098 | .6418 |
| Age | .070 | .030 | .7766 |
| Sex | -.028 | -.057 | .5991 |
| NW v W | -.024 | -.163 | .1185 |
| N v O | -.012 | -.111 | .2933 |
| SES | -.124 | -.155 | .1388 |
| 1 v other | .011 | .011 | .9163 |
| 2 v other | -.013 | -.098 | .6425 |
| D Comprehension | -.110 | -.095 | .6284 |
| D Pic. Arr. | -.048 | -.034 | .7472 |

Model VA R = .342, p = .3080, Inc. VA-III p = .7005

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.099 | .6493 |
| S v other | .231 | .097 | .6407 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .070 | .024 | .8178 |
| Sex | -.028 | -.062 | .5649 |
| NW v W | -.024 | -.162 | .1197 |
| N v O | -.012 | -.113 | .2826 |
| SES | -.124 | -.153 | .1419 |
| 1 v other | .011 | .010 | .9216 |
| 2 v other | -.013 | -.096 | .6337 |
| D Comprehension | -.110 | -.096 | .6359 |

Model VB R = .331, p = .3648, Inc. VB-III p = .8699

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.092 | .6149 |
| S v other | .231 | .106 | .3150 |
| Age | .070 | .049 | .6491 |
| Sex | -.028 | -.042 | .6960 |
| NW v W | -.024 | -.181 | .0808 |
| N v O | -.012 | -.112 | .2895 |
| SES | -.124 | -.153 | .1421 |
| 1 v other | .011 | .021 | .8352 |
| 2 v other | -.013 | -.078 | .5306 |
| D Pic. Arr. | -.048 | -.036 | .7298 |

Model VI R = .344, p = .2983, Inc. VI-III p = .6698

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.084 | .5711 |
| S v other | .231 | .108 | .3078 |
| Age | .070 | .052 | .6286 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Sex | -.028 | -.054 | .6158 |
| NW v W | -.024 | -.197 | .0564 |
| N v O | -.012 | -.116 | .2721 |
| SES | -.124 | -.133 | .2040 |
| 1 v other | .011 | .010 | .9218 |
| 2 v other | -.013 | -.088 | .5909 |
| FSIQ | -.125 | -.104 | .6733 |

Model VII R = .330, p = .3713, Inc. VII-III p = .8888

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.093 | .6195 |
| S v other | .231 | .106 | .3177 |
| Age | .070 | .044 | .6783 |
| Sex | -.028 | -.047 | .6584 |
| NW v W | -.024 | -.179 | .0843 |
| N v O | -.012 | -.115 | .2737 |
| SES | -.124 | -.141 | .1775 |
| 1 v other | .011 | .017 | .8666 |
| 2 v other | -.013 | -.077 | .5267 |
| VIQ | -.077 | -.020 | .8408 |

Model VIII R = .357, p = .2330, Inc. VIII-III p = .5338

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.088 | .5893 |
| S v other | .231 | .110 | .2984 |
| Age | .070 | .054 | .6150 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Sex | -.028 | -.058 | .5889 |
| NW v W | -.024 | -.197 | .0559 |
| N v O | -.012 | -.101 | .6609 |
| SES | -.124 | -.140 | .1604 |
| 1 v other | .011 | .018 | .8602 |
| 2 v other | -.013 | -.090 | .6008 |
| PIQ | -.140 | -.147 | .1592 |

Model IX R = .358, p = .2293, Inc. IX-III p = .5447

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.106 | .3161 |
| S v other | .231 | .109 | .3009 |
| Age | .070 | .044 | .6804 |
| Sex | -.028 | -.056 | .6039 |
| NW v W | -.024 | -.169 | .1042 |
| N v O | -.012 | -.080 | .5476 |
| SES | -.124 | -.176 | .0888 |
| 1 v other | .011 | .039 | .7143 |
| 2 v other | -.013 | -.074 | .5120 |
| VIQ-PIQ | .076 | .149 | .1527 |

Model X R = .333, p = .3560, Inc. X-III p = .8460

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.088 | .5930 |
| S v other | .231 | .106 | .3143 |
| Age | .070 | .044 | .6773 |
| Sex | -.028 | -.051 | .6338 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | -.024 | -.186 | .0725 |
| N v O | -.012 | -.120 | .2528 |
| SES | -.124 | -.134 | .1991 |
| 1 v other | .011 | .014 | .8879 |
| 2 v other | -.013 | -.084 | .5701 |
| F Verb | -.095 | -.050 | .6431 |

Model XI R = .331, p = .3624, Inc. XI-III p = .8642

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.093 | .6185 |
| S v other | .231 | .107 | .3117 |
| Age | .070 | .048 | .6527 |
| Sex | -.028 | -.036 | .7354 |
| NW v W | -.024 | -.182 | .0785 |
| N v O | -.012 | -.112 | .2885 |
| SES | -.124 | -.141 | .1780 |
| 1 v other | .011 | .103 | .8959 |
| 2 v other | -.013 | -.066 | .5379 |
| F Attn | -.075 | -.040 | .7063 |

Model XII R = .354, p = .2499, Inc. XII-III p = .5173

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.097 | .6385 |
| S v other | .231 | .104 | .6772 |
| Age | .070 | .045 | .6727 |
| Sex | -.028 | -.074 | .5118 |

Table 12 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | -.024 | -.196 | .0581 |
| N v O | -.012 | -.102 | .6655 |
| SES | -.124 | -.153 | .1416 |
| 1 v other | .011 | .024 | .8175 |
| 2 v other | -.013 | -.092 | .6151 |
| F Perf | -.113 | -.136 | .1925 |

Model XIII R = .356, p = .3998, Inc. XIII-III p = .7871

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.245 | -.100 | .6470 |
| S v other | .231 | .102 | .6597 |
| Age | .070 | .037 | .7313 |
| Sex | -.028 | -.085 | .5681 |
| NW v W | -.024 | -.188 | .0720 |
| N v O | -.012 | -.100 | .6470 |
| SES | -.124 | -.155 | .1404 |
| 1 v other | .011 | .033 | .7580 |
| 2 v other | -.013 | -.096 | .6307 |
| F Verb | -.095 | -.004 | .6599 |
| F Attn | -.075 | -.041 | .7029 |
| F Perf | -.113 | -.134 | .2058 |

*p < .05; **p < .01; ***p < .001

Table 13

Multiple, Partial, and Zero-Order Correlations for Presence of Friends Models

Model I R = .205, p = .1829

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.204 | .0637 |
| S v other | .006 | .159 | .1538 |

Model II R = .219, p = .5694, Inc. II-I p = .7849

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.213 | .0563 |
| S v other | .006 | .173 | .1228 |
| Age | .032 | .008 | .9451 |
| Sex | .047 | .076 | .5145 |

Model III R = .338, p = .2311, Inc. III-II p = .1431

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.226 | *.0465 |
| S v other | .006 | .217 | .0569 |
| Age | .032 | .016 | .8824 |
| Sex | .047 | .071 | .5472 |
| NW v W | .237 | .227 | *.0454 |
| N v O | .006 | .024 | .8288 |
| SES | -.142 | -.005 | .9642 |

Model IV R = .435, p = .1570, Inc. IV-III p = .1806

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.235 | *.0437 |
| S v other | .006 | .281 | *.0159 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .032 | .017 | .8830 |
| Sex | .047 | .051 | .6754 |
| NW v W | .237 | .281 | *.0160 |
| N v O | .006 | .095 | .5652 |
| SES | -.142 | -.027 | .8178 |
| 1 v other | -.085 | -.073 | .5505 |
| 2 v other | .115 | .188 | .1097 |
| Comprehension | -.225 | -.158 | .1804 |
| Pic. Arr. | -.029 | -.100 | .5898 |

Model IVA R = .425, p = .1336, Inc. IVA-III p = .1328

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.227 | .0504 |
| S v other | .006 | .283 | *.0146 |
| Age | .032 | .045 | .7081 |
| Sex | .047 | .065 | .5903 |
| NW v W | .237 | .273 | *.0184 |
| N v O | .006 | .108 | .6327 |
| SES | -.142 | -.024 | .8322 |
| 1 v other | -.085 | -.074 | .5400 |
| 2 v other | .115 | .187 | .1090 |
| Comprehension | -.225 | -.134 | .2573 |

Model IVB R = .410, p = .1823, Inc. IVB-III p = .2137

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.250 | *.0311 |
| S v other | .006 | .264 | *.0227 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .032 | .036 | .7584 |
| Sex | .047 | .058 | .6304 |
| NW v W | .237 | .290 | *.0125 |
| N v O | .006 | .120 | .3131 |
| SES | -.142 | -.000 | .9943 |
| 1 v other | -.085 | -.038 | .7460 |
| 2 v other | .115 | .227 | .0509 |
| Pic. Arr. | -.029 | -.051 | .6699 |

Model V  R = .415, p = .2304,  Inc. V-III p = .3117

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.251 | *.0314 |
| S v other | .006 | .257 | *.0275 |
| Age | .032 | .038 | .7481 |
| Sex | .047 | .051 | .6769 |
| NW v W | .237 | .279 | *.0166 |
| N v O | .006 | .117 | .6713 |
| SES | -.142 | -.007 | .9547 |
| 1 v other | -.085 | -.040 | .7401 |
| 2 v other | .115 | .228 | .0515 |
| D Comprehension | .005 | .023 | .8396 |
| D Pic. Arr. | .058 | .081 | .5073 |

Model VA  R = .408, p = .1893,  Inc. VA-III p = .2265

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.246 | * .0336 |
| S v other | .006 | .263 | * .0230 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .032 | .056 | .6454 |
| Sex | .047 | .068 | .5722 |
| NW v W | .237 | .275 | *.0176 |
| N v O | .006 | .122 | .3032 |
| SES | -.142 | -.001 | .9879 |
| 1 v other | -.085 | -.039 | .7444 |
| 2 v other | .115 | .223 | .0547 |
| D Comprehension | .005 | .027 | .8165 |

Model VB R = .414, p = .1683, Inc. VB-III p = .1888

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.250 | *.0307 |
| S v other | .006 | .261 | *.0244 |
| Age | .032 | .033 | .7785 |
| Sex | .047 | .048 | .6907 |
| NW v W | .237 | .289 | *.0125 |
| N v O | .006 | .119 | .3177 |
| SES | -.142 | -.007 | .9512 |
| 1 v other | -.085 | -.044 | .7141 |
| 2 v other | .115 | .228 | *.0490 |
| D Pic. Arr. | .058 | .082 | .5013 |

Model VI R = .421, p = .1480, Inc. VI-III p = .1551

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.230 | *.0471 |
| S v other | .006 | .274 | *.0179 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | .032 | .069 | .5678 |
| Sex | .047 | .070 | .5612 |
| NW v W | .237 | .252 | *.0294 |
| N v O | .006 | .112 | .6533 |
| SES | -.142 | -.020 | .8576 |
| 1 v other | -.085 | -.064 | .5994 |
| 2 v other | .115 | .208 | .0739 |
| FSIQ | -.230 | -.114 | .6620 |

Model VII R = .456, p = .0644, Inc. VII-III p = *.0456

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.212 | .0687 |
| S v other | .006 | .284 | *.0140 |
| Age | .032 | .099 | .5887 |
| Sex | .047 | .076 | .5276 |
| NW v W | .237 | .217 | .0621 |
| N v O | .006 | .077 | .5219 |
| SES | -.142 | -.059 | .6248 |
| 1 v other | -.085 | -.098 | .5861 |
| 2 v other | .115 | .194 | .0955 |
| VIQ | -.320 | -.224 | .0532 |

Model VIII R = .408, p = .1916, Inc. VIII-III p = .2309

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.245 | *.0343 |
| S v other | .006 | .267 | *.0211 |
| Age | .032 | .049 | .6844 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Sex | .047 | .065 | .5910 |
| NW v W | .237 | .284 | *.0143 |
| N v O | .006 | .124 | .2947 |
| SES | -.142 | -.001 | .9875 |
| 1 v other | -.085 | -.042 | .7220 |
| 2 v other | .115 | .223 | .0548 |
| PIQ | -.075 | -.009 | .9386 |

Model IX R = .442, p = .0910, Inc. IX-III p = .0750

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.239 | *.0394 |
| S v other | .006 | .272 | *.0186 |
| Age | .032 | .062 | .6065 |
| Sex | .047 | .065 | .5920 |
| NW v W | .237 | .274 | *.0180 |
| N v O | .006 | .092 | .5526 |
| SES | -.142 | -.032 | .7844 |
| 1 v other | -.085 | -.065 | .5917 |
| 2 v other | .115 | .224 | .0538 |
| VIQ-PIQ | -.234 | -.188 | .1063 |

Model X R = .443, p = .0904, Inc. X-III p = .0743

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.219 | .0594 |
| S v other | .006 | .285 | *.0139 |
| Age | .032 | .079 | .5156 |
| Sex | .047 | .067 | .5804 |

Table 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| NW v W | .237 | .210 | .0703 |
| N v O | .006 | .071 | .5562 |
| SES | -.142 | -.051 | .6749 |
| 1 v other | -.085 | -.083 | .5074 |
| 2 v other | .115 | .176 | .1329 |
| F Verb | -.307 | -.189 | .1048 |

Model XI R = .426, p = .1309, Inc. XI-III p = .1287

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.222 | .0563 |
| S v other | .006 | .261 | *.0240 |
| Age | .032 | .078 | .5209 |
| Sex | .047 | .106 | .6252 |
| NW v W | .237 | .273 | *.0185 |
| N v O | .006 | .129 | .2760 |
| SES | -.142 | -.037 | .7566 |
| 1 v other | -.085 | -.074 | .5391 |
| 2 v other | .115 | .244 | *.0354 |
| F Attn | -.178 | -.138 | .2442 |

Model XII R = .407, p = .1919, Inc. XII-III p = .2315

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.245 | *.0343 |
| S v other | .006 | .267 | *.0212 |
| Age | .032 | .050 | .6777 |
| Sex | .047 | .065 | .5929 |
| NW v W | .237 | .283 | *.0146 |

Tabel 13 (continued)

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| N v O | .006 | .124 | .2944 |
| SES | -.142 | -.002 | .9857 |
| 1 v other | -.085 | -.043 | .7170 |
| 2 v other | .115 | .222 | .0560 |
| F Perf | -.063 | -.001 | .9894 |

Model XIII R = .451, p = .1584, Inc. XIII-III p = .1896

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| R v other | -.131 | -.206 | .0803 |
| S v other | .006 | .268 | *.0225 |
| Age | .032 | .087 | .5220 |
| Sex | .047 | .097 | .5724 |
| NW v W | .237 | .219 | .0632 |
| N v O | .006 | .076 | .5353 |
| SES | -.142 | -.071 | .5612 |
| 1 v other | -.085 | -.094 | .5575 |
| 2 v other | .115 | .186 | .1166 |
| F Verb | -.307 | -.135 | .2618 |
| F Attn | -.178 | -.061 | .6178 |
| F Perf | -.063 | -.093 | .5512 |

*$p < .05$; **$p < .01$; ***$p < .001$

Table 14

Tester Effects for WISC Subtests

| | | | |
|---|---|---|---|
| Information | R = .252 | p = **.0039 | |
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .250 | .233 | **.0023 |
| 2 v other | -.098 | -.032 | .6764 |
| Comprehension | R = .461 | p = ***.0000 | |
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .424 | .298 | ***.0002 |
| 2 v other | -.369 | -.200 | **.0080 |
| Similarities | R = .369 | p = ***.0000 | |
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .340 | .234 | **.0022 |
| 2 v other | -.293 | -.152 | *.0430 |
| Vocabulary | R = .355 | p = ***.0000 | |
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .337 | .245 | **.0014 |
| 2 v other | -.265 | -.119 | .1145 |
| Digit Span | R = .211 | p = *.0197 | |
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .089 | .174 | *.0207 |
| 2 v other | .121 | .192 | *.0109 |

Table 14 (continued)

| Picture Completion | R = .165 | p = .0903 | |
|---|---|---|---|
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .007 | .077 | .3138 |
| 2 v other | -.147 | -.165 | *.0276 |

| Picture Arrangement | R = .229 | p = **.0097 | |
|---|---|---|---|
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .163 | .062 | .5792 |
| 2 v other | -.221 | -.163 | *.0294 |

| Block Design | R = .212 | p = *.0185 | |
|---|---|---|---|
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .186 | .112 | .1359 |
| 2 v other | -.181 | -.014 | .1702 |

| Object Assembly | R = .250 | p =**.0042 | |
|---|---|---|---|
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .155 | .038 | .6281 |
| 2 v other | -.247 | -.198 | **.0085 |

| Coding | R = .218 | p =*.0147 | |
|---|---|---|---|
| Tester | R(DV,IV) | partial r | p |
| 1 v other | .200 | .217 | **.0042 |
| 2 v other | -.021 | -.092 | .2249 |

*p < .05; **p < .01; ***p < .001

Table 15

Analysis of Tester Effects for Alertness-Intelligence

| Model I RM + F Attn | R = .434 | p = ***.0000 | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .022 | .083 | .3120 |
| Sex | .065 | .018 | .8244 |
| SES | .190 | .059 | .5163 |
| NW v W | -.166 | -.041 | .6241 |
| N v O | -.131 | -.148 | .0663 |
| F Attn | .404 | .375 | ***.0000 |

| Model II RM + F Attn + Tester | R = .465 | p = ***.0000 | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .022 | .116 | .1562 |
| Sex | .065 | .030 | .7198 |
| SES | .190 | .051 | .5455 |
| 1 v other | .142 | .062 | .5421 |
| 2 v other | -.173 | -.178 | * .0283 |
| NW v W | -.166 | -.008 | .9217 |
| N v O | -.131 | -.056 | .5026 |
| F Attn | .404 | .386 | ***.0000 |

Increment II-I p = .0756

*p < .05; **p < .01; *p < .001

Table 16

Analysis of Tester Effects for Emotionality-Tension

| Model I RM + F Attn R = .254 p = .1245 | | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .007 | .034 | .6844 |
| Sex | .049 | .124 | .1254 |
| SES | .092 | .073 | .6236 |
| NW v W | -.096 | -.132 | .1046 |
| N v O | .045 | .125 | .1229 |
| F Attn | -.115 | -.204 | *.0116 |

| Model II RM + F Attn + Tester R = .312 p = .0532 | | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | .007 | .083 | .3151 |
| Sex | .049 | .117 | .1540 |
| SES | .092 | .064 | .5548 |
| 1 v other | .089 | .169 | *.0375 |
| 2 v other | .102 | .167 | *.0398 |
| NW v W | -.096 | -.081 | .6711 |
| N v O | .045 | .041 | .6264 |
| F Attn | -.115 | -.232 | **.0048 |
| Increment II-I | p = .0700 | | |

*p < .05; **p < .01; ***p < .001

Table 17

Analysis of Tester Effects for Learning-Difficulty

Model I RM + Digit Span R = .263 p = .0954

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.031 | .7060 |
| Sex | -.096 | -.053 | .5266 |
| SES | -.001 | -.071 | .6052 |
| Digit Span | -.240 | -.236 | **.0039 |
| NW v W | .051 | .013 | .8688 |
| N v O | .041 | .047 | .5731 |

Model II RM + Digit Span + Tester R = .330 p = *.0277

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.065 | .5623 |
| Sex | -.096 | -.037 | .6627 |
| SES | -.001 | -.084 | .3133 |
| Digit Span | -.240 | -.251 | **.0025 |
| 1 v other | -.102 | -.045 | .5929 |
| 2 v other | .183 | .191 | *.0189 |
| NW v W | .051 | .063 | .5470 |
| N v O | .041 | .042 | .6160 |

Increment II-I p = *.0396

Table 17 (continued)

| Model III RM + Coding R = .311 p = *.0181 | | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | -.028 | -.015 | .8507 |
| Sex | -.096 | -.041 | .6213 |
| SES | -.001 | -.075 | .6329 |
| NW v W | .051 | .024 | .7646 |
| N v O | .041 | .027 | .7389 |
| Coding | -.297 | -.290 | ***.0006 |

| Model IV RM + Coding + Tester R = .366 p = **.0062 | | | |
|---|---|---|---|
| Predictor | R(DV,IV) | partial r | p |
| Age | -.028 | -.053 | .5307 |
| Sex | -.096 | -.031 | .7099 |
| SES | -.001 | -.082 | .6801 |
| 1 v other | -.102 | -.073 | .6187 |
| 2 v other | .183 | .197 | *.0155 |
| NW v W | .051 | .079 | .6596 |
| N v O | .041 | .066 | .5670 |
| Coding | -.297 | -.299 | ***.0004 |
| Increment VI-III | p = *.0439 | | |

Table 17 (continued)

Model V RM + F Attn R = .362 p = **.0021

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.048 | .5693 |
| Sex | -.096 | -.009 | .9097 |
| SES | -.001 | -.103 | .2089 |
| NW v W | .051 | .012 | .8797 |
| N v O | .041 | .062 | .5402 |
| F Attn | -.335 | -.344 | ***.0000 |

Model VI RM + F Attn + Tester R = .416 p = ***.0000

| Predictor | R(DV,IV) | partial r | p |
|---|---|---|---|
| Age | -.028 | -.091 | .2718 |
| Sex | -.096 | -.004 | .9635 |
| SES | -.001 | -.112 | .1700 |
| 1 v other | -.102 | -.086 | .2997 |
| 2 v other | .183 | .215 | **.0086 |
| NW v W | .051 | .047 | .5789 |
| N v O | .041 | .041 | .6294 |
| F Attn | -.335 | -.361 | ***.0000 |

Increment VI-V p = *.0256

*p < .05; **p < .01; ***p < .001

# IV Discussion

The major purpose of this study was an evaluation of the relationship between WISC subtests and behavioral criteria, with refinement of previous methods of investigation. Such refinements included the use of subtests obtained from typical testing situations, and represents an advantage over the 'single-subtest' design (one or several subtests administered out of context). With the latter approach, even if significance is obtained, there remains the question of validity of generalization to scores obtained from normal testing.

The behavioral criteria were likewise based upon 'real life' observations, rather than artificially created conditions, e.g., use of stress films, to maximize validity of generalization.

As a further precaution, the subtest-behavior correlation was compared with that obtained from demographic variables alone, and from composite WISC scores.

Because of the multi-dimensional nature of this study, large number of hypotheses considered, and use of multiple correlation techniques, the use of subtests for clinical assessment must be evaluated with reference to both type of significance obtained and criterion involved.

## Type of Significance

Three different measures of significance were considered: (1) multiple correlation; (2) increment over the Reference Model (RM) (the model assessing the contribution of non-WISC or demographic variables); and (3) partial correlation.

The multiple correlation reflects how well a criterion can be predicted from all the variables entered into a particular equation. Hence, the bulk of the variance could be accounted for by non-WISC variables, e.g., tester or ethnic effects. The significance of the multiple correlation must therefore be evaluated with reference to a) the significance of the increment over RM--that is, whether the addition of the WISC variable has contributed significantly to prediction of the criterion, and b) the relative sizes of the partial correlations of the variables in the model. It should be noted, however, that special problems were encountered in this regard with the tester contingencies. Since Ss had been randomly assigned to tester, there should have been no relationship between tester contingencies and scores on a rating scale judged independently by a social worker. However, low but significant partial correlations for tester contingencies were found for some of the CBC criteria, creating difficulty in interpretation of the multiple correlation and increment over RM, since both Tester and WISC variables had been entered together.

Two interpretations were possible to account for these results: (1) Ss were not randomly distributed among the testers with regard to CBC criteria, resulting in a correlation between tester and CBC score; or (2) because of a correlation between tester and subtest, some of the subtest-criterion variance was appearing in the tester variable. (See Tester Effects I.)

The first explanation would result in an increase in the size of the multiple correlation when Tester was added; the second would not, since it represents a redistribution of existing variance. On the basis of analyses performed to clarify the issue, more support was received for the first explanation: addition of Tester to the RM + WISC model usually resulted in a significant increment.

While the Tester effect did not generally affect the results of the original analysis, several models were affected and are noted accordingly in the discussion of results.

The third measure of evaluation, the partial correlation, assesses the correlation between the WISC variable and the criterion with all other variables held constant. While, in optimal research settings, we might well be able to hold these 'other variables' constant, in real life they are often hopelessly confounded. Predictions based upon those WISC variables showing little change from zero-order to partial correlation, i.e., those least correlated with demographic variables, would be easiest to use directly; the others require more care in their application.

Particularly with respect to partial correlation, it is imperative to consider not only significance but magnitude. With large samples, significance may be obtained for relatively small correlations; thus 'significant' and 'useful' are not necessarily interchangeable. However, since less than optimal conditions prevailed during the collection of criterion scores, e.g., raters not trained, data incomplete, significant findings of low magnitude might best be reserved for re-evaluation with more refined criterion measures.

## Nature of the Criteria

For some criteria, the addition of WISC variables generated sizeable significant multiple correlations; for others, prediction was no better than that obtained from demographic variables alone.

The criteria varied on two dimensions: type of instrument used for assessment, and nature of the characteristic evaluated, i.e., intellectual behavior, emotional adjustment, social behavior.

### Intellectual Behavior

The three criteria assessing intellectual characteristics were (CBC) Alertness-Intelligence and (CBC) Learning Difficulty, representing the child's case worker's assessment of observed behavior, and (School Report) Quality of Schoolwork, representing the teacher's assessment of actual school performance.

The relationship between each of the hypothesized subtests (Information, Comprehension, Vocabulary, Picture Arrangement and Picture Completion) to Alertness-Intelligence was significant with regard to both multiple and partial correlation, and increment over RM; Information was the best subtest predictor ($R = .433$).

The composite IQ measures and factor scores were also successful predictors, producing slightly larger multiple correlations than the subtests, the highest resulting from Full Scale IQ ($R = .467$).

The entering of factor scores as predictors produced a totally unexpected finding: F Attn (Coding + Digit Span) was almost as successful a predictor as Full Scale IQ (R = .465), yet neither of the two subtests had been hypothesized related to the criterion. The interpretation of these subtests by Glasser & Zimmerman (1967) and by Rapaport et al. (1968), treating Digit Span as a measure of attention and anxiety, and Coding as a measure of visual-motor dexterity, do not account for this result. (Although Glasser & Zimmerman (1967) consider Coding as a measure of motivation, they disassociate it with any aspect of intelligence.) One explanation for the obtained relationship may be that both subtests (particularly Coding) are relatively novel tasks, hence measures of ease of learning. A high degree of attention, concentration, and motivation are also required. Success on this factor may thus reflect an "achievement orientation" (Oakland, 1969) which appears as 'intelligent behavior'.

The results for Learning Difficulty were similarly successful: use of all hypothesized subtests but Digit Span (Information, Vocabulary, Coding) was supported. (Digit Span appeared initially significant, but significance depended on the presence of the tester variables.) Subtests produced moderate multiple and partial correlations, and significant increments over RM, Information again being the best subtest predictor (R = .394). The composite IQ models and factor score models also produced significant moderate multiple correlations, with the exception of F Perf, whose multiple correlation was not significant.

F Attn again emerged as a successful predictor of intellectual behavior, although the multiple correlation dropped from .416 to .362 when variance attributable to significant tester effects was removed.

For the Quality of Schoolwork criterion, measuring actual school performance, F Attn stood alone in producing the only significant multiple correlation (R = .465). Although all hypothesized subtests (Vocabulary, Information, Digit Span, Coding) produced significant partial correlations and increments over RM, none produced a significant multiple correlation. The same held true for the composite IQ measures and F Verb. (F Perf did not produce a significant increment over RM.)

Conclusions. Although the hypothesized subtests appeared usable to some extent in the prediction of 'intellectual behavior', the composite and factor scores were equally, or more, successful. F Attn appeared to be the best general predictor of this class of behavior.

While level of intellectual functioning appeared capable of prediction from WISC scores, a subjective measure, (School Report) child's Attitude Towards School, could not be predicted successfully. However, in absence of data on validity and reliability for the School Report measure, it cannot be determined if this lack of success was a function of the subtests themselves, or of an inability of the teacher to assess this dimension.

Emotional Adjustment

The three criteria related directly to level of emotional adjustment were (CBC) Emotionality-Tension, (CBC) Defiance-Hostility, and the MPT Tension Index.

Subtest hypotheses were not generally supported for Emotionality-Tension. Block Design (Calvin, 1955; Hafner et al., 1960), Object Assembly (Calvin, 1955; Wechsler, 1958; Rapaport et al., 1968), Picture Completion (Glasser & Zimmerman, 1967), and Picture Arrangement (Glasser & Zimmerman, 1967; Wechsler, 1958) were not able to predict this criterion. Digit Span (Moldawsky & Moldawsky, 1957; Calvin, 1955; Wechsler, 1958; Jurjevich, 1963; Rapaport et al., 1968; Glasser & Zimmerman, 1967; Bortner & Birch, 1970) and Coding (Hafner et al., 1960; Rapaport et al., 1968; Bortner & Birch, 1970) produced low but significant partial correlations and increased prediction above RM, but did not result in significant multiple correlations. When the latter two subtests were combined into F Attn, the multiple correlation became significant ($R = .312$). When, however, the tester variables were removed from the model, significance disappeared, thereby weakening prediction from this factor.

The attempt to predict Defiance-Hostility was not successful. No WISC variable was able to produce a significant multiple correlation or increment over RM; the only significant partial correlation obtained with the criterion was for F Attn.

The third measure of emotional adjustment, the MPT Tension Index, had most of its variance accounted for by a strong tester effect, but consideration of the increment over RM allowed for assessment of the WISC variables. Although the addition of Comprehension (Bortner & Birch, 1970) contributed to prediction, the correlation was in the wrong direction. Whereas the subtest should have been negatively correlated with the Tension Index, a positive zero-order and partial correlation resulted. When examined in the context of positive partial correlations for Full Scale IQ, Verbal IQ, Performance IQ, F Verb and F Perf, it became apparent that the Index, based upon number of verbally expressed needs, was, in part, a function of how intelligent and verbal the child was, as well as how disturbed. The Index is computed from the sum of the expression of four needs--love, extrapunitiveness, submission, and personal adequacy--although well-adjusted children have been found to make a greater proportion of their Tension Index references to love and personal adequacy (Andrew et al., 1959). Since number of expressed needs appears to be a function of intelligence, a ratio index might be a more effective indicator of maladjustment.

While the use of Digit Span (Bortner & Birch, 1970) was not supported for this criterion, Coding (Bortner & Birch, 1970) produced the hypothesized negative partial correlation and increment in predictability. When combined with Digit Span into F Attn, predictability was further increased ($R = .706$).

The hypothesis of correlation with Scatter was completely unconfirmed, reflective of the general lack of success of any difference-score measure.

It appeared that for this measure of emotional adjustment, F Attn was the most effective predictor.

Conclusions. Prediction from subtests was notably poorer for the CBC scores measuring emotional adjustment than for those involving intellectual behavior. Since inter-rater reliabilities were similar for all CBC scores used (see Table 1), thus eliminating poorer reliability as an explanation, it appears that the subtests were less effective in the prediction of the former behaviors, a finding consistent with views regarding subtests as more reflective of general intelligence than of specific personality characteristics (e.g., Cohen, 1959). It is, of course, possible that judgments of apparent emotional maladjustment were less valid than those of intellectual behavior, but available validity data (see Table 2) does not support this contention.

F Attn appeared to be a better predictor than either subtests or the other composite measures, holding up to some extent as an index of emotional adjustment, as well as one of intellectual functioning. Apparently some of the requisites for manifest achievement and intelligence are those characteristics also associated with good emotional adjustment.

## Social Behavior

The three criteria measuring social behavior were (CBC) Responsibility, (School Report) Relationship to Classmates, and (School Report) Presence of Friends.

Both Relationship to Classmates and Presence of Friends failed to produce significant multiple correlations, although, as previously stated, in absence of reliability and validity data for the School Report measure, it cannot be determined whether this failure is due to the subtests or the teacher. Quality of Schoolwork, something the teacher is directly involved with, may be a more objective and easily determined measure than how successful the child is in interaction with peers. The teacher may, in addition, possess a positive or negative halo effect toward the child, or simply be unable to view things from his vantage point.

The use of subtests was partially supported for (CBC) Responsibility. Comprehension (Krippner, 1964; Glasser & Zimmerman, 1967; Rapaport et al., 1968) produced a low but significant partial correlation, although the multiple correlation was not significant. The use of Picture Arrangement (Rapaport et al., 1968; Glasser & Zimmerman, 1967) was not supported. F Attn (involving subtests not hypothesized) emerged as the best predictor ($R = .368$).

The obtained correlation of F Attn with Responsibility lends support to prior indications that this factor is an effective measure of initiative, persistence, and conflict-free use of ability.

## Evaluation of Prediction from Subtests

The results of this study both confirm and deny the efficacy of behavioral prediction from subtest scores. Confirmation of their usefulness is found in the significant multiple and partial correlations formed with the criteria, and denial in the finding that wherever subtests worked, composite measures were equally, or more, effective. Although the subtests appeared to assess specific characteristics to some degree (since some, but not all, hypotheses were confirmed), general intelligence appeared to be as powerful a predictor. There appears, therefore, no advantage in using subtests when the full protocol is available.

One notable exception to the above was F Attn, the modified factor score. The combination of subtests Coding and Digit Span produced an effective indicator of all three types of criteria, and as such, was the single best predictor of those behaviors.

Factor analysis is a relatively new development in the history of the Wechsler scales. Although results have previously indicated the need for a reappraisal of the clinical use of individual subtests, this warning has been largely ignored, as evidenced by its non-appearance in the literature on subtest validation.

The factor-behavior relationship in general has not been explored, except for Witkin (1962), who used F Perf as a measure of psychological differentiation in cognitive style research.

The success of F Attn as a predictor, a totally unexpected finding, is particularly startling when its components are examined. While Digit Span has been the subject of a great deal of investigation, Coding has been largely ignored.

The F Attn score, as used, was not complete, since the Arithmetic subtest had not been administered and could therefore not be included. Its addition could either improve the measure or weaken it, should it prove to be confounded with other variables such as prior learning (and even attitude toward arithmetic! ). The use of the complete factor score warrants further study; indeed, based upon successful results for two of the factors (F Attn in the present study, F Perf in Witkin's (1962) work), consideration might well be given to the inclusion of factor scores in the WISC protocol.

Failure of Difference Measures

The relative success of the subtests referred only to scaled subtest scores. (Scaled scores represent a quantitative measure--how high a score S can obtain, while Difference scores are relative measures--how high a score S obtains relative to his performance as a whole.) Scatter traditionally refers to the relative position of the subtests rather than to their magnitude (Rapaport et al., 1968), yet the Difference score measures were almost totally unsuccessful.

The use of subtests as a measure of the amount of an ability that S possesses is consistent with Witkin's use of F Perf as a measure of cognitive differentiation--the more 'F Perf' S has, the more differentiated he is (1962).

The concept is clearest at the low extremes. A subject who, for example, scores only five on Vocabulary, is limited in how intelligent he can appear, even if Vocabulary is his highest subtest score. This relationship, however, is far from perfect. Clinical experience will verify that S can be affected adversely by test anxiety, boredom, defiance, etc., and that exceptionally high scores can be obtained by extremely maladjusted individuals. As a general predictive measure, however, it is the scaled (or age-corrected absolute) score, rather than the difference score, that is related to manifest behavior.[5]

[5]Since WISC subtests are age-corrected before computation of the IQ scores, and WAIS subtests are not, WISC subtest findings might not be directly applicable to WAIS subtests.

## Additional Findings

### Tester Effects

Behavioral criteria. Some of the criteria evidenced significant tester effects for one or both tester contingencies. For the MPT, where strong tester effects were obtained, this finding could mean either that the test was sensitive to administration, or that there was a disproportionate distribution of Ss with respect to this variable. For the other criteria, where 'Tester' as a predictor was included only to control for possible variation in WISC administration, the findings of significance were probably a function of subject distribution.

Subtests. The WISC manual provides both verbatim instructions for administration and guidelines for scoring. Despite these attempts at standardization, variability due to tester effects has been found to occur. Excluding those effects caused by deliberate departure from established procedure, e.g., over- or undertiming, re-wording of questions, variability may be caused by such factors as rapport, tone of voice, and expectancy of success. Witmer et al. (1971), found that verbal approval given after the first response in each of four subtests (Arithmetic, Digit Span, Picture Arrangement, Block Design) increased performance over a group given verbal disapproval. Dickstein & Kephart (1972) found that positive examiner expectancy resulted in higher scores on Full Scale IQ, Performance IQ, Picture Completion and Picture Arrangement.

Since subtests vary in the degree of objectivity in scoring, differential vulnerability to tester effects on this dimension should occur. Miller & Chansky (1972), sending out an unscored WISC protocol with request for scoring to Clinical and School psychologists selected from the APA directory, found considerable scoring differences; Vocabulary, Similarities, and Comprehension were found to cause the greatest difficulty in scoring. Satler & Winget (1970) used Ss who had memorized protocols producing either superior or average intelligence scores, and which contained ambiguous responses for Comprehension, Similarities, and Vocabulary. They found that more credit was given by testers for the ambiguous responses of Ss of 'superior' intelligence than for Ss of 'average' intelligence.

Plumb & Charles (1955) found considerable disagreement in the scoring of 254 ambiguous Comprehension responses obtained from the Wechsler-Bellevue scales, for both experienced and novice testers.

The results of the present study, showing highest tester-subtest multiple correlations for Comprehension, Similarities, and Vocabulary, is therefore in agreement with previous research. The findings, in addition, of lower but significant multiple correlations for most of the other subtests indicates the need for serious consideration of the tester variable in the evaluation of WISC performance.

<u>Inconclusive effects</u>

The presence of ethnic effects for Non-white v. White and Negro v. Other contingencies indicated differences between these groups on criterion scores. Consistent ethnic effects were observed for the Tension Index--low positive correlations for Non-white v. White, and low negative correlations for Negro v. Other--but since the measure is apparently confounded by intelligence, it cannot be determined if the results are a function of greater or lesser intelligence, or greater or lesser tension, or some conbination thereof.

There was some indication that Negroes did less well on the Quality of Schoolwork measure than did Whites and Puerto Ricans, but this finding was not consistently upheld.

There was also some indication that Negroes and Puerto Ricans had more friends at school than did Whites, although without information regarding the reasons for placement of each child, type of school attended, ethnic balance in the class, and similar variables, the question of these results remains open for further investigation.

A consistent attendance effect was noted for Presence of Friends, where those in regular schools appeared to have fewer friends than those in special schools, but this finding was also impossible to interpret meaningfully without additional information of the type specified above.

The only age effect obtained was for Attitude Towards School, where the older the child, the worse his apparent attitude toward school.

# V Conclusions

While this study failed to support the use of subtests as the most effective predictors of behavior, it nevertheless supported many of the hypotheses relating them to specific behavioral characteristics. The findings, however, were based upon an atypical sample, children from disrupted homes, and may therefore not be applicable to the population as a whole. Caution would dictate replication with a more representative sample to ascertain the generality of the results.

The necessity for consideration of the type of criterion and manner of its assessment was strongly established. An additional methodological consideration receiving support was the need for control of ethnic and tester variables. While multiple and partial correlation allow for control over these variables, it is at the cost of creating a hypothetical situation ("everything else held constant"). It would have been preferable to have used a sample more homogeneous with respect to the demographic variables, although impossible to do so without scarificing sample size to the point of uselessness.

The inclusion of empirically-derived factor scores, as an addition to, or substitute for, the content-based Verbal and Performance IQ scores was also suggested by the data.

In view of both the relative success and obvious shortcomings of this study, further research along the lines indicated seems warranted as a step toward a more definitive validation of the clinical use of the WISC.

# Appendix

## Table A

Cronbach Alpha Coefficients for CBC Component and Composite Scores

N = 401

| Composite Score | Component Score | Alpha |
| --- | --- | --- |
| Ia = 3 + 5 | Alertness-Attention-Curiosity | .89 |
| | 3. Alertness | .86 |
| | 5. Attention-Curiosity | .83 |
| Ib = 4 | 4. Intelligence | .80 |
| I = Ia + Ib | ALERTNESS-INTELLIGENCE | .92 |
| II = 1 + 2 | LEARNING DIFFICULTY | .81 |
| | 1. Distractibility | .73 |
| | 2. Learning Difficulty | .73 |
| III = 6 | 6. Responsibility | .84 |
| IV = 7 | 7. Unmotivated-Laziness | .77 |
| V = 8 + 9 + 15 | AGREEABLENESS | .90 |
| | 8. Cooperativeness | .82 |
| | 9. Compliance | .74 |
| | 15. Agreeableness | .81 |
| VIa = 10 | 10. Defiance | .82 |
| VIb = 11 + 12 + 13 | | .87 |
| | 11. Hostility | .88 |
| | 12. Unsocialized | .80 |
| | 13. Lies, steals, destroys | .71 |
| VI = VIa + VIb | DEFIANCE-HOSTILITY | .91 |
| VII = 14 - 16 + K | LIKEABILITY | .90 |
| (K = constant to make | 14. Likeability | .89 |
| scores positive) | 16. Gloomy-Sourness | .79 |
| VIII = 17 + 18 | EMOTIONALITY-TENSION | .90 |
| | 17. Irritability-Tension | .85 |
| | 18. Tension-Anxiety | .80 |
| IX = 21 | 21. Infantilism | .76 |
| Xa = 19 | 19. Withdrawal B | .72 |
| Xb = 20 | 20. Withdrawal C | .82 |
| X = Xa + Xb | WITHDRAWAL | .86 |
| XI = 22 | 22. Appetite | .92 |
| XII = 23 | 23. Sex Precociousness | .77 |
| XIII = 24 | 24. Over-Cleanliness | .58 |
| XIV = 25 | 25. Sex Inhibition | .34 |
| XV = 26 | 26. Activity | .83 |
| XVI = 27 | 27. Assertiveness | .76 |

Borgatta and Fanshel (1970)

Table B

Sex and Ethnic Distribution of Ss for CBC, MPT and School Report Criteria

| Criterion | Ethnicity | | | | | |
|---|---|---|---|---|---|---|
| | White | | Negro | | Puerto Rican | |
| | M | F | M | F | M | F |
| CBC | 28 | 16 | 28 | 17 | 32 | 34 |
| MPT | 28 | 19 | 31 | 21 | 32 | 37 |
| Quality of Schoolwork | 16 | 10 | 14 | 8 | 22 | 20 |
| Attitude Toward School | 17 | 10 | 14 | 9 | 20 | 22 |
| Relationship to Class-mates | 17 | 10 | 16 | 12 | 24 | 22 |
| Presence of Close Friends | 13 | 8 | 11 | 7 | 22 | 21 |

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