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AUTHOR Pearson, Virginia L.
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ABSTRACT

This study investigated correlations between the Qualitative score of the Porteus Maze Test and age and rates of recidivism of correctional institution inmates. In addition, the study was structured to provide answers to the following questions: (1) Is there a relationship between age and rates of recidivism and the Conformity-Variability score of the PMT? (2) Is there a relationship between the Qualitative score and the Conformity-Variability score on the PMT? (3) Is the abbreviated method for obtaining the Qualitative score of the PMT a reliabile method? Two sample groups of female inmate subjects were administered the PMT: adult subjects and juvenile subjects. The adult subjects were from a correctional institution in Texas. The juvenile subjects were from correctional institutions in Louisiana and Oklahoma. The study confirmed earlier research concerning the high reliability of the PMT with criminal populations. The study suggested that the records of recidivists and nonrecidivists be followed to ascertain if the subjects who obtained higher Qualitative scores are the ones most likely to be returned to correctional institutions. (Author/DEP)

TR73-12-1

VIRGINIA L. PEARSON

Correlations Between the Porteus Maze Test Qualitative Score and Age and Recidivism Rates of Female Correctional Inmates

CORRELATIONS BETWEEN THE PORTEUS MAZE TEST QUALITATIVE SCORE AND AGE AND RECIDIVISM RATE OF FEMALE CORRECTIONAL INMATES

by

Virginia L. Pearson, Ph.D.
East Texas State University at Texarakana

INSTRUCTIONAL SCIENCE ASSOCIATES

PREFACE

Porteus originally developed the Maze Test as an intellective measure for mental retardates. The Porteus Maze Test is a pencil and paper task requiring the subject to find his way through successively more difficult labyrinths. The test yields a Test Quotient that is said to be a measure of planning ability and foresight. Later, a method of scoring the qualitative errors made on the Porteus Maze was developed. This measure, known as the Qualitative score, has been found to effectively identify certain members of the tested population.

The major purpose of the study was to provide additional information about the Qualitative scores obtained by correctional institution inmates. It had not been determined if the differences, which were observed between juveniles and adults, were due to differences in age or due to the recidivists included in the samples. The present study, thus, investigated the correlation between the Qualitative score and the effects of age and recidivism.

The study was structured in three major phases. The initial phase was the detailed review of related literature in order to formulate the direction for the study. The second phase of the study was the selection of the subjects and subsequent testing, and the third phase was the data analysis. Subjects were selected from three states: Texas, Oklahoma, and Louisiana. Testing was performed in two sessions: The original test and a later delayed test. The delayed test of Maze X1 was given to obtain information for both the Qualitative score and the Conformability-Variability score. A statistical methodology was employed to obtain correlations for the scores and the variables selected for analysis.

V.L.P.

FORWARD

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At Texas Woman's University, sincere appreciation is expressed to Professor Ethel Leach of the Department of Special Education as well as the special education doctoral students who assisted with the test scoring. These were: Miss Linda Bryant, Mrs. Marjorie Chapman, Mrs. Virginia Damron, and Mrs. Billie Fullingim.

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Virginia L. Pearson

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The major purpose of the study was to investigate correlations between the Qualitative score of the Porteus Maze Test and age and rates of redidivism of correctional institution inmates. In addition, the study was structured to provide answers to the following questions:

- Is there a relationship between age and rates of recidivism and the Conformity-Variability score of the Porteus Maze Test?
- Is there a relationship between the Qualitative score and the Conformity-Variability score of the Porteus Maze Test?
- Is the abbreviated method for obtaining the Qualitative score of the Porteus Maze Test a reliable method?

Two sample groups of female inmate subjects were administered the Porteus Maze Test: adult subjects, and juvenile subjects. The adult subjects were from a correctional institution in Texas. The juvenile subjects were from correctional institutions in Louisiana and Oklahoma.

Adult recidivists made significantly more Qualitative score errors than did nonrecidivists. Juvenile recidivists made fewer qualitative errors than juvenile nonrecidivists. Older subjects had significantly lower Conformity-Variability scores; as the age level of subjects increased, memory for motor patterns decreased. Subjects with low Conformity-Variability scores tended to have high Qualitative scores, and subjects with high Conformity-Variability scores tended to have low Qualitative scores. The abbreviated method of obtaining the Qualitative score was found to be a highly reliable method.

The study confirmed earlier research concerning the high reliability of the Porteus Maze Test with criminal populations. The study suggested that the records of recidivists and nonrecidivists be followed to ascertain if the subjects who obtained higher Qualitative scores are the ones most likely to be returned to correctional institutions.

INTRODUCTION

Porteus developed the first maze tests for experimental use in late 1913 (Porteus, 1966). The Porteus Maze Test series was originally conceived as a means of classifying mental defectives. The test series is a paper and pencil test in which the subject traces a pathway from a specific starting point through passageways to an exit point. On each maze there is only one unblocked path to the exit. When scored, in order to obtain a test age quotient, the test is said to measure judgment, planning ability, and foresight. The test series includes 12 subtests labeled Year III through Year XII, plus Year XIV and Adult. If a subtest is not completed successfully through Year XI, another test is permitted. In that case, the subject may have three additional test trials on Year XII, Year XIV, and Adult. Thus, the series may consist of as many as 22 subtests. Each test series is given individually and the administration time required for testing is from 15 to 60 minutes (Buros, 1965).

As early as 1917 Porteus suspected that performance on the Maze Test should discriminate delinquents from nondelinquents. He found, however, that quantitative differences in responses, the Test-Age scores, obtained by delinquents were not significantly different from nondelinquents (Porteus, 1966). It was not until 1942 that Porteus devised a method for measuring the qualitative responses to the Maze Test. He then found the obtained average qualitative score for adult male criminals to be 57 points as contrasted to 18 points for noncriminal adult males. A critical score of 29 was found to be exceeded by 80% of delinquent boys. For delinquent girls, the critical score was found to be 32. Much of the research with the Maze Test has been with delinquent populations. It was later discovered that test-retest performances could be matched with 90% accuracy for more detailed information about the individual (Porteus, 1960, p. 222).

PURPOSE

The major purpose of the study was to investigate the possible correlation between the Qualitative score of the Porteus Maze Test, Vineland Revision, and age and rates of recidivism of female inmates in state correctional institutions. In addition, the answer to the following question was sought:

If the variable of age is held constant, will the Porteus Maze Qualitative score be greater for recidivists than for first offenders?

In addition to the major purpose, the study also sought to clarify answers to the following questions:

- Are Conformity-Variability scores related to the age of the subjects?
- Are Conformity-Variability scores related to rates of recidivism of the subjects?
- Does a correlation exist between Qualitative scores and Conformity-Variability scores?
- Is the abbreviated method of obtaining a Qualitative score a reliable method for female inmates?

HYPOTHESES

In order to investigate the major purpose of the study the following null hypotheses were tested:

Ho_1: There is no significant correlation between the age of the subjects and their Qualitative scores at the .05 level of confidence.

Ho_2: There is no significant correlation between rates of recidivism and Qualitative scores when the effects of age are held constant at the .05 confidence level.

In addition to the major purpose of the study, answers to the study problem questions were tested by the following null hypotheses:

Ho_3: There is no significant correlation between Conformity-Variability scores and age of subjects at the .05 level of confidence.

Ho_4: There is no significant correlation between rates of recidivism and Conformity-Variability scores when the effects of age are held constant at the .05 confidence level.

Ho_5: There is no correlation between the Qualitative scores and the Conformity-Variability scores at the .01 level of significance.

H_{o_6}: The abbreviated method is not a reliable method of obtaining the Qualitative score.

LIMITATIONS

Generalization of the results of this study was limited for the following reasons.

The study was designed to measure correlation between age of female inmates and Porteus Maze Test, and female recidivism and Porteus Maze Test when the latter is scored qualitatively.

The sample for this study was limited to incarcerated females in selected Texas, Oklahoma, and Louisiana institutions and, therefore, caution should be exercised before generalizing to subjects with similar backgrounds in other geographic areas.

The sample for this study was limited to females with intelligence levels above 80 IQ points in order to control for the variability of sex and IQ. The results should not be generalized to males or to other ranges of intelligence.

ASSUMPTIONS

Certain assumptions were required in the performance of the study. These assumptions were as follows.

It was assumed that norms on the Porteus Maze Test were adequate for the noninstitutionalized population. It was, therefore, not necessary to have a control group from the general population to demonstrate normal performance.

Because of the test-retest nature of the study design, it was assumed that each subject would serve as her own control.

The Texas Department of Corrections uses a battery of tests to determine the intelligence quotient and educational achievement level of each inmate. These tests include the Otis Quick-Scoring Intelligence Test, the Revised Beta, and the Chicago Nonverbal Test of Mental Ability. In addition, the inmates are given the Gray-Votaw-Rogers General Achievement Test. The states of Oklahoma and Louisiana also have intelligence scores on the inmates in their correctional institutions. The scores from these tests were accepted as valid for the purposes of this study.

DEFINITIONS

A glossary of terms relative to the study are presented below.

Delinquent. Any child who violates any penal law as a felony or misdemeanor where punishment prescribed may be by confinement in jail; or habitually deports himself as to injure the morals or health of himself or others; or habitually associates with vicious and immoral persons (Revised Texas Statutes, 1968, p. 222). For purposes of this paper, the term was limited to incarcerated youth.

Recidivist. One who tends to relapse into a previous mode of behavior, as the habitual criminal. For the purpose of this study, it shall mean any person incarcerated for a second offense.

Qualitative score (Q score). A method of scoring the Porteus Maze Test which is concerned with errors in execution rather than planning. It is the sum of weighted scores (Porteus, 1966, p. 253).

Conformity-Variability score (C-V score). Points allotted to paired resemblances in performances on Maze XI by one individual (Porteus, 1966, p. 232).

DESIGN

In addition to a review of related literature, a statistical methodology was employed in the design of the study. This design employed the procedure of a test; a retest, and an analysis of the testing results.

TEST DESIGN

In order to test the effect that the variable of age had on Qualitative and Conformity-Variability scores of the Porteus Maze, each subject was tested at two sessions. At the first session, each subject was presented with Test V through adult. Maze XI was presented twice, in accordance with the instruction of Porteus. At the second session, Maze XI was presented again to each subject in order to make comparisons for the Conformity-Variability score. The methods of sample population selection and testing procedures are set forth in the following paragraphs.

Test Population

A target female population for the study was selected from correctional institutions from three states; Texas Goree Unit in Huntsville was selected for the adult population, and the Tecumseh, Oklahoma Girlstown and the Pineville, Louisiana Training Institute were selected for the juvenile population. The selected subjects were all below 50 years of age and included only females whose IQ's were 80 or above. The subject sample included all who met the criteria of age and intelligence which included approximately 120 adult females. Forty-seven juvenile female subjects were from Oklahoma, and 33 from Louisiana were included for a total of 80 juvenile subjects.

Test Approval

Written approval was obtained for testing at the following institutions:

- For testing adult subjects at the Goree Unit,
  Huntsville, Texas
  Dr. G.J. Beto, Director
  Texas Department of Corrections
  Huntsville, Texas 77340

- For testing juvenile subjects at Girlstown, Tecumseh, Oklahoma
  Mr. L.E. Rader, Director of Institutions
  Social and Rehabilitative Services
  Oklahoma Public Welfare Commission
  P.O. Box 25352
  Oklahoma City, Oklahoma 73125

- For testing juvenile subjects at Louisiana Training Institute, Pineville, Louisiana
  Mr. J.D. Middlebrooks, Chief
  Correctional Services Division
  Louisiana Department of Corrections
  P.O. Box 44304, Capitol Station
  Baton Rouge, Louisiana 70804

Testing

The testing was conducted by the investigator and one trained assistant. In order to preserve anonymity and reduce bias in Conformity-Variability scores, subjects were assigned code numbers which were recorded on the back of their Maze Test. The code numbers were then recorded on a master sheet which included the subjects's birthdate and recidivism information. All subjects were administered the Porteus Maze Test beginning with Text V through the Adult Test of the original series, in accordance with the established Porteus procedure. Upon the completion of the eight tests of the series the subject was asked to repeat Maze XI. After a lapse of not less than two weeks, nor more than six weeks, the subjects were asked to repeat Maze XI for purposes of Conformity-Variability scoring (Appendix A).

Test Scoring

One-fourth of the test records were selected at random for scoring by both the method recommended by Porteus (Appendix B) and the abbreviated method to check the reliability of the abbreviated method. Qualitative scoring was performed in accordance with the abbreviated method (Appendix C). The tests were scored at random so that the scorer did not know whether or not the subject belonged to the recidivist or nonrecidivist group. In order to assure interscorer reliability on the Conformity-Variability score, and the abbreviated qualitative scoring, five people independently scored 25 of the same randomly selected maze performances.

DATA ANALYSIS

Data analysis was performed in two parts: one, the analysis of the Qualitative scores; and two, the analysis of the

Conformity-Variability scores. Correlations were calculated among following variables:

- Pearson product-moment correlation was used to test relationship between Conformity-Variability scores and Qualitative scores.
- Pearson product-moment correlation was used to test data concerning the standard method of obtaining the Qualitative score and the abbreviated method.
- Pearson product-moment correlation was used to ascertain interscorer reliability between independent scorers.

- Pearson product-moment correlation was used to test relationship between levels of inmates and the Qualitative scores.
- Pearson product-moment correlation was used to test relationship between the age levels of the inmates and their Conformity-Variability scores.
- Point-biserial and partial correlation were used to test relationship between the rates of recidivism (nonrecidivists and recidivists) and the Qualitative scores with age held constant.
- Point-biserial and partial correlation were used to test relationship between the rates of recidivism (nonrecidivists and recidivists) and the Conformity-Variability scores with age held constant.

The acceptable level for rejecting the null hypotheses was set at the .05 level, and the findings presented in tabular and narrative form.

LITERATURE REVIEW

The Porteus Maze Test originally was designed as a nonverbal measure of intelligence suitable for use with mental retardates. Additionally, the Porteus Maze was shown to be an effective measure of manual dexterity and its application was extended to the selection of candidates for vocational training. Later, a method of qualitatively scoring the types of errors made on the Porteus Maze was developed which received much interest among researchers. This method, the Qualitative score, has been suggested as an instrument to measure gratification delay or inhibition (Kainer, 1965, p. 26). McAloon found that the Qualitative score could be increased under conditions of stress (McAloon, 1968, p. 69). In order to save scoring time and increase reliability across scorers, Barry and others shortened the Qualitative score to two major errors (Barry, 1960, p. 291). An even newer use of the Porteus Maze was developed which matched separate performances on Maze XI by an individual. Porteus postulated that psychomotor habits become fixated with age and should indicate the extent that subconscious memory effected motor habits. He further showed that this subconscious memory was stronger and persisted longer in delinquent and criminal test subjects (Porteus, 1960, p. 224).

The Qualitative score was found to be a discriminative measure between delinquent and nondelinquent populations. Porteus found that a cutoff score of 32 identified 80% of female delinquents. Among other studies, Docter and Winder found a mean Qualitative score difference of 16 points between delinquents and nondelinquents (Docter & Winder, 1954, p. 75).

Criminal statistics indicate that one-half of all criminals are destined to become recidivists. Several studies were directed toward predicting which of the first-offenders would recidivate. Black found that parts of the Minnesota Multiphasic Personality Inventory could accurately predict recidivism (Black, 1967, p. 82). The Hand Test was found to be more accurate in predicting which subjects would be nonrecidivists (Wetzel, 1967, p. 71). Stewart-Bentley used a battery of four tests to determine if recidivists could be identified on the basis of rigid performance. A maze-type test from this battery was found to have a positive correlation with recidivism (Stewart-Bentley, 1969, p. 75).

Even less was found to be known about the female criminal. This lack of knowledge was thought to be due to the smaller number of females incarcerated in prisons. Studies indicated that the ratio of females to males offenses decreased as age increased. At age eight there were 24 times more offenses by males, while at age 60 there were only twice as many offenses by males as females. Giannell found that females had more internal inhibitors which tended to limit their criminal activity (Giannell, 1970, p. 35). A study by Unkovic and Ducsay found that the female recidivist had usually been involved in a no-victim crime and had not had an accomplice (Unkovic, 1969, p. 344).

DATA ANALYSIS

The results of the statistical study are presented in this chapter. The analysis of the data is structured to correspond with the presentation order of the null hypothesis presented. The first two null hypotheses answer the major purpose of the study, and hypotheses 3 through 6 are in response to the problem statements. Mathematical formulas used in data extrapulation may be found in Appendix D, subjects' test scores may be found in Appendix E, and the independent scorers correlations may be found in Appendix F.

Two-hundred subjects from correctional institutions participated in the study. Of these, 120 were adult inmates from Texas (TA), 47 were juvenile inmates from Oklahoma (OJ), and 33 were juvenile inmates from Louisiana (LJ). Although a few subjects were unable to complete the series of tests, a prorated Qualitative (Q) score was obtained and performances of all subjects were scored qualitatively.

There were 192 scores obtained for the immediate Conformity Variability (C-V) score because not all subjects were able to perform Test XI. For the delayed test, 156 subjects were available. The fewer subjects retested than from the original test session was because of an early release program at the Texas Goree Unit; consequently, 36 Texas adult subjects were not available (NA) for the retest session. Seventy-two of the original 80 juvenile subjects were still incarcerated and, therefore, were available for retesting to obtain the delayed C-V score. In those instances where the subjects were unable to complete the Maze XI during the original presentation the score was noted as nonsignificant (NS). Both test sessions were performed during a two-month period.

All subject records were scored by the abbreviated method; however, not all were scored by the standard method and dashes were used to denote this lack of data in Appendix E. Although the requirements for intelligence ranges were met in both Oklahoma and Louisiana subjects specific IQ's for juveniles were not provided by Louisiana. This lack of data is again indicated by dashes.

NULL HYPOTHESIS 1

Pearson product-moment correlation was used to test the null hypotheses of no correlation between age and the Q

score of the Porteus Maze Test. In addition to obtaining correlation coefficients between all subjects and their ages, correlations were also obtained separately between adult subjects and their ages and between juvenile subjects and their ages.

Data Analysis

A positive coefficient of .2814 was found between the ages of all subjects and their Q scores. This was significant at the .005 level, which caused the rejection of the null hypothesis. The high confidence level is frequently found for relatively low correlations when large samples are tested. There was a tendency for older subjects to make more qualitative errors on the Porteus Maze Test than younger subjects. When the subjects' test records were separated into adult (age 20 and over) and juvenile groups, the correlation between age and Q score was found to be greater among juveniles (+.3098) than among adults (+.1980). Table 1 indicates the correlations between age and Q scores of the subjects. The study found a mean of 42.7 for all adult subjects and a mean of 43.2 for juveniles. A test of difference between means did not reveal a significant difference at the .05 level. The largest mean qualitative score was found for subjects in the 30 to 39 age group, which had a mean of 48.529. The 10 subjects in the over 40 age group obtained a mean Q score of 46.7. Juvenile subjects obtained a mean Q score of 43.2 which is greater than the mean for subjects whose ages were between 20 and 29. This age group had the lowest mean Q score, which was 37.26. When tests of significance were performed for the different age levels, it was found that the age level of 20 to 29 obtained a significantly lower Q score mean than did that of age level 30 to 39. The t value of 2.244 was found to be significant at the .05 level of confidence. There were no other significant differences found between Q score means by age levels. The Q score means for subjects divided by age levels are indicated in Table 2. The null hypothesis of no correlation between age and Q scores, therefore, was rejected.

Summary

The null hypothesis of no correlation between the age of subjects and their Q scores was rejected. The correlation coefficient of +.2814 was significant at the .005 level. The study found that the Q scores of the subjects tended to increase for older subjects, and that younger subjects tended to have lower scores. The lowest scoring age group was among subjects whose ages were 20 to 29. A slight, but significant, relationship between age and the Q score of female subjects was found.

Table 1
Correlation for Age and Qualitative Score

Subject	N	r	z	p
All Subjects	200	+.2814	+3.5595	.005
Adult	120	+.1980	+2.1600	.050
Juvenile	080	+.3098	+2.4000	.050

Table 2
Mean and Standard Deviation of Qualitative Scores by Age Level

Age Level In Years	N	Mean	S.D.
Under 20	80	43.200	22.912
20-29	76	37.263	25.328
30-39	34	48.529	28.679
Over 40	10	46.700	23.296

NULL HYPOTHESIS 2

Point-biserial correlation was used to test the null hypothesis of no correlation between recidivism and the Q score. The obtained correlation was subsequently used in partial correlation to determine the relationship of recidivism and Q score when the effects of age were held constant.

Data Analysis

When the subjects were considered as a whole, a very small, nonsignificant correlation coefficient of .074 was found between recidivism and the Q scores. The correlations are presented in Table 3. When adult and juvenile recidivists were considered separately, a nonsignificant negative coefficient of -.159 was found between juvenile recidivists and Q scores.

Table 3
Correlation Between Qualitative Score and Recidivism

Subject	r	Test	p
Adult Recidivist	+.3030	+3.943[a]	.010
Juvenile Recidivists	-.1590	-1.531[a]	ns
Adult Age	+.1980	---	---
Adult Recidivists (Age Constant)	+.2520	---	.050
Age & Q Score (All Subjects)	+.2814	+3.559[b]	.005
Recidivists (All Subjects) (Age Constant)	+.2230	---	---
Age & Q Score (Recidivist Constant)	+.1897	---	ns
All Subjects	+.0740	+3.540[b]	ns

Note:
a. t Test
b. z Test

The means and standard deviations for several variables is presented in Table 4. It can be seen that the nonrecidivists juvenile group obtained a mean Q score of 46.083 which was eight points higher than the mean of 38.815 obtained by juvenile recidivists. The standard deviation of 26.993 for juvenile nonrecidivists was eight points higher than the standard deviation of recidivists, which was not significant at the .05 level. When a t Test between the means was performed a nonsignificant value of 1.52 was found. The results are reversed for adult recidivists and nonrecidivists. The smaller mean of 34.681 was found for the nonrecidivist group, which was 15.436 points less than the mean obtained by the recidivists. This represented a significant difference at the .02 level for the t value of 2.57 for adults. A positive correlation coefficient of .303 was found between adult recidivists and Q scores, which was significant at the .01 level of confidence. Although a strong relationship between Q scores and recidivism was not indicated, a tendency for adult recidivists to obtain higher qualitative scores was noted. This supported the belief that recidivists make more qualitative errors on the Porteus Maze and

Table 4
Mean and Standard Deviation of
Qualitative Score

Subject	N	Mean	S.D.
Adult	120	41.241	29.418
Recidivists	051	50.117	30.710
Nonrecidivists	069	34.681	34.993
Parole Violators	013	63.538	38.714
Escapees	019	48.420	21.780
Juvenile Convictions	030	46.700	21.066
Juvenile	080	42.700	22.318
Recidivists	032	38.875	18.032
Nonrecidivists	048	46.080	26.993

perform in a more homogeneous fashion. When the effects of age were held constant, the correlation between Q scores and recidivism decreased to .223, which was considered significant at the .05 level. The correlation between age and Q scores was not found to be significant when the effects of recidivism were removed. A stronger relationship was found between recidivism and the Q score than between age and Q score. The null hypothesis of no correlation between recidivism and Q scores was rejected at the .05 level.

Summary

The null hypothesis of no correlation between recidivism and Q scores was rejected when the effects of age were removed. The correlation between recidivism and Q scores remained significant after partial correlation was performed to remove the factor of age. The coefficient of +.223 revealed a slight tendency for recidivists to obtain larger Q scores than nonrecidivists. When the effects of recidivism were removed, the correlation between age and Q scores was no longer significant. It was found that juveniles and adults had opposite results on Q scores. The mean scores obtained by adult recidivists were found to be significantly higher than the mean scores for the nonrecidivists when a t Test between the means

was performed. A t value of 2.57 was obtained, which was significant at the .02 level. Juvenile nonrecidivists had a higher although nonsignificant mean score than juvenile recidivists. It was found that oler subjects did not make more qualitative errors when recidivism was not a factor. Recidivism contributed more to higher scores than did age. A relationship between Q scores and recidivism was found by the study.

NULL HYPOTHESIS 3

Pearson product-moment correlation was used to test the null hypothesis of no correlation between age and C-V scores.

Data Analysis

A negative coefficient of .6867 was found to exist between the age of subjects and their C-V scores. This relationship was significant at the .001 level of confidence and the null hypothesis was rejected. Data is presented in Table 5. A moderately strong tendency was found for younger subjects to have more resemblances between paired performances and, therefore, a postulated stronger memory for motor patterns. Similarly, older subjects had fewer resemblances among paired performances which resulted in lower C-V scores. The scoring method devised by Porteus gives the most points to right angles. The careful, meticulous, stimulus-bound subject, at all age levels, tended to perform all mazes in exactly the same manner, and even different mazes could be identified as to subject in some instances. Observation tended to support the C-V as a life-style, work-attack measure of the individual. The null hypothesis of no correlation between C-V scores and age, therefore, was rejected.

Summary

The null hypothesis of no correlation between the age of subjects and C-V scores was rejected. A strong negative relationship was found which indicated that younger subjects had more paired resemblances between Maze XI than did older subjects. This may be interpreted to mean that memory for motor patterns was not as strong in older subjects. A negative relationship was found betwe n C-V scores and age.

NULL HYPOTHESIS 4

Point-biserial correlation was used to test the null hypothesis of no correlation between recidivism and C-V scores. The obtained coefficients were subsequently used in partial

Table 5
Correlation Between Conformity-Variability Score and Recidivism

Test	r	z	p
Recidivism & C-V	-.0710	-0.779	ns
Age & C-V	-.6867	-7.830	.001
Recidivism & C-V (Age Constant)	+.3164	---	.005
Age & C-V (Recidivism Constant)	-.7229	---	.001

correlation to determine the relationship between recidivism and the tendency to repeat performances similarly.

Data Analysis

Juvenile and adult recidivists were found to perform in a similar manner when data was collected and were, therefore, considered together for this correlation. A small negative correlation of -.0710 was found between the C-V scores and recidivism. This small coefficient indicated that no relationship existed between recidivism and the tendency toward repetitive motor patterns. As reported in the Hypothesis 3, a strong, negative correlation was found between age and the C-V score. The correlation coefficient of -.6867 was significant beyond the .001 level. Correlations were presented in prior Table 5. This coefficient was used in partial correlation to determine if the relationship changed between recidivism and C-V scores when age was not a factor. When the effects of age were removed, a positive coefficient of .3164 was found between recidivists and their C-V scores, which was significant at the .005 level. When age was not affecting the performance, recidivists had a strong tendency to repeat performances in the same manner, and this may be interpreted as evidence of a moderate memory for motor patterns among recidivists. This supported the statement Porteus made to the effect that recidivists have been shown to have compulsive behavior patterns which may bias the results of studies of criminal populations (Porteus, 1965, p. 241). When the effects of recidivism were removed from the correlation a coefficient of -.7229 was found between age and C-V scores; therefore, the negative relationship was increased. When recidivism was not a factor, the presence of memory, or perseverative motor tendencies decreased with increasing age. Younger

subjects were found to have stronger memories for motor patterns. In addition to finding strong perseverative motor patterns for immediate paired performances among criminal samples, there was a greater tendency among recidivists for matched performances after delay. Adult subjects were given Maze XI after a delay of five weeks, and differences were noted for delayed performances between groups. Table 6 presents the means for the immediate retest performance, the delayed test performance and the mean loss between performences. Although the mean loss for all adults was 4.96 points, the recidivists had a mean loss of only 1.65, while the mean loss of the nonrecidivists was 6.57. Performance by nonrecidivists approximated the larger losses Porteus found for noncriminal samples. The performance of recidivists after delay was closer to Porteus results for criminals in general. The differences between the juvenile recidivists and nonrecidivists were reversed. Nonrecidivists had the smaller mean loss of 1.68 points between immediate paired performances and delayed performances as compared to 2.24 for recidivists. This tendency for juveniles to behave in an opposite manner from adults was noted earlier in the correlation between Q scores and recidivism. In addition to smaller losses between immediate and delayed performances, the juvenile nonrecidivists had smaller mean C-V scores for both tests. Although norms have not been established for losses between performance, it presents a provocative challenge to further development of the C-V score as a research instrument. The null hypothesis of no correlation between C-V scores and recidivism, therefore, was rejected.

Summary

The null hypothesis of no relationship between C-V scores and recidivism with age held constant was rejected. The coefficient of +.3164 was significant beyond the .001 level. The correlation was not significant before age was removed. Subjects who were recidivists tended to have a larger number of similarities on paired performances of Maze XI. Nonrecidivists had fewer similarities between their paired performances. In addition, the correlation between age and C-V scores became stronger when the effect of recidivism was removed. The coefficient increased from -.6867 to -.7229. A relationship was found between C-V scores and rates of recidivism of the subjects.

NULL HYPOTHESIS 5

Pearson product-moment correlation was used to test the null hypothesis of no correlation between Q scores and C-V scores. The 482 subjects who had C-V scores and their abbreviated Q scores were used in this analysis.

Table 6
Mean and Loss of Conformity-Variability Score

Subject	N	Immediate C-V Score	N	Delayed C-V Score	Mean Loss	Immediate C-V S.D.
Adult	115	11.952	84	06.988	4.964	4.03
Recidivists	047	11.193	33	09.534	1.659	4.20
Nonrecidivists	078	13.013	51	06.441	6.570	3.28
Juvenile	077	10.909	72	08.785	2.124	2.99
Recidivists	032	11.579	31	09.355	2.240	3.76
Nonrecidivists	045	09.948	41	08.268	1.680	3.28
Age Level in Years						
Under 20	077	10.909	72	08.785	2.124	2.99
21-29	071	12.324	55	10.782	1.542	--
30-39	033	10.591	24	08.083	2.508	--
Over 40	012	10.830	08	08.851	1.979	--

Data Analysis

When the relationship between C-V scores and Q scores was tested, a negative correlation coefficient of -.688 was found. This was found to be significant beyond the .001 level for 180 degrees of freedom. There was a strong tendency for subjects who made the most qualitative errors on the mazes to have the fewest number of similarities between paired performances; and, conversely, those subjects who made the least number of qualitative errors on the mazes had many resemblances between the paired mazes. The null hypothesis of no relationship between C-V scores and Q scores of female inmates, therefore, was rejected.

Summary

The null hypothesis of no correlation between Q scores and C-V scores was rejected. Subjects who had large Q scores tended to have small C-V scores, and subjects who had small Q scores tended to have large C-V scores. The correlation coefficient was -.688. The subjects who made many errors marked by carelessness, disregard for instructions and impulsivity were not likely to have a strong memory for motor patterns. A negative relationship was found between C-V scores and Q scores.

NULL HYPOTHESIS 6

Pearson product-moment correlation was used to test the null hypothesis of no correlation between the standard method of obtaining the Q score and the abbreviated method introduced by Barry and others. The records of all subjects were scored by the abbreviated method. In addition, in order to test the reliability of the newer procedure, 50% of the records were selected at random also to be scored by the standard method.

Data Analysis

A correlation coefficient of .969 was obtained which is highly significant beyond the confidence level of .0001. The mean of 36.40 for the sample scored by the standard method was three points higher than the mean of 33.08 for the abbreviated method. There was also three points difference between the cutoff score of 32 used by Porteus, and the cutoff score of 29 utilized by other studies. Table 7 presents the percentages identified by cutoff scores of 29 and 32 and by the standard Q score. Although the abbreviated method was found to be highly reliable, it was not as sensitive in identifying inmate subjects as the standard method. When the subjects were classified according to recidivists or

Table 7
Percentage of Subject Identified Comparing Scoring Technique

Subject	N	Percent Standard Q Score	N	Percent Abbreviated (29 Cutoff)	Percent Abbreviated (32 Cutoff)
Adult	70	73.23	120	65.83	57.50
Recidivists	26	80.64	051	74.47	66.66
Nonrecidivists	35	61.53	069	59.42	50.69
IQ Levels					
Below 90	25	97.22	037	86.49	81.08
90-119	20	73.13	067	64.18	55.22
Above 120	16	50.00	016	31.25	25.00
Juvenile					
Recidivists	32	---	032	71.87	68.75
Nonrecidivists	48	---	048	70.83	66.66

nonrecidivists, significantly more recidivists are identified than nonrecidivists. The study showed that when the less predictable subjects (nonrecidivists) were removed, the ability of the Porteus Maze to identify delinquents increased. A t Test performed between the Q scores obtained by the present study and a previous study by Porteus found a value of 1.5, which indicated that the results of this study were not significantly different from prior studies at the .05 level and, which supports the findings of Porteus and others concerning the high reliability of the Q score. (Test results may be found in Appendix G.) The null hypothesis of no correlation between the standard Qualitative scoring procedure and the abbreviated method, therefore, was rejected.

Summary

The null hypothesis of no correlation between methods of obtaining the Q score was rejected. The coefficient of +.969 was found to be highly significant. The abbreviated method of obtaining the Q score was found to be a reliable procedure. The mean obtained by the abbreviated method was three points lower than the mean obtained by the standard method. The abbreviated method of obtaining the Q score was found to be highly reliable.

DATA ANALYSIS/SUMMARY

The study was designed to test possible correlations between female correctional institution inmates and the Q scores of the Porteus Maze Test. Two-hundred subjects participated in the study; of these, 120 were Texas adult inmates, 47 were Oklahoma juvenile inmates, and 33 were Louisiana juvenile inmates. Each subject was tested on two occasions for the purpose of obtaining C-V and Q scores.

The major purpose of the study was structured in two parts. The first part was to test the correlation between age and Q scores. A small relationship was found which indicated a trend for older subjects to make more qualitative errors on the series of mazes than younger subjects. For this study, however, juveniles were not the lowsst scoring group; subjects in the 20 to 29 age level had the lowest mean score. The second part of the major purpose of the study was to test the relationship between Q scores and recidivism. A relationship between recidivism and Q scores was found which remained after effects of age were removed. Recidivists made higher Q scores than nonrecidivists, even after the factor of age was removed. When the effects of recidivism were removed, no relationship remained between age and Q scores. The older subjects did not tend to make more qualitative errors if they were not also recidivists.

In addition to the major purpose of the study, several other factors were examined. The results indicated a strong relationship between the age of subjects and their C-V scores. The older subjects had the lowest scores which indicated that memory for motor patterns was not as persistent among the older subjects, but was more persistent for younger subjects.

Recidivists were found to have stronger memory for motor patterns, after effects of age were removed. Nonrecidivists tended to have fewer similarities on the paired mazes. The relationship between C-V scores and recidivism was depressed by age and was not apparent until age was removed. In addition, the relationship between age and C-V scores increased when the factor of recidivism was removed.

A moderately strong relationship between Q scores and C-V scores was found. Subjects who made many qualitative errors had lower scores on the measure of memory for motor patterns. Subjects who made few qualitative errors on the mazes tended to have high C-V scores.

The abbreviated method of obtaining the Q score was found to be highly reliable. It was not as sensitive as the standard method of obtaining the Q score in identifying subjects. In most instances the interscorer reliability for the abbreviated method increased over the standard method. In addition, the abbreviated Q score is much faster to obtain. The abbreviated method for Q scoring would be very appropriate, if the purpose of using the Q score is to order subjects.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The Porteus Maze Test has been the object of frequent and intensive research. The Porteus Maze has had wide applications in industry and in vocational training as a measure of manual dexterity. Further research with the Qualitative (Q) score had determined its reliability as an instrument in the identification of delinquents. In addition, the Q score was found to increase under conditions of stress and to measure the ability to delay gratification. Later, Barry and others developed an abbreviated method of obtaining the Q score.

Statistics reveal that one-half of all criminals will recidivate. Investigators have used such tests as the Minnesota Multiphasic Personality Inventory, the Hand Test, and others in an effort to find a reliable instrument to predict recidivists. Less research has been directed toward the female criminal and recidivist.

The study found that recidivists tended to make more qualitative errors than nonrecidivists. Although a relationship was found between Q scores and age, it was nonsignificant when the factor of recidivism was removed. Higher Q scores were found to be more dependent upon recidivism than upon increased age. It was further found that a strong relationship existed between the age of the female subjects and the Conformity-Variability (C-V) scores. As the age of the subjects was increased the C-V score decreased. This relationship became stronger when the effects of recidivism upon the C-V scores were removed. A moderate relationship was found between C-V scores and recidivism after the effects of age were removed. The study additionally found a highly significant correlation between the abbreviated method of obtaining the Q score and the standard method. The coefficient of .969 between the two methods confirms the high reliability of the abbreviated Q score.

CONCLUSIONS

The present study yields heretofore unavailable information on correlations between age, recidivism, and the Qualitative score of the Porteus Maze Test. Age is a factor in

obtaining higher Q scores, only as long as recidivism also is a factor. Recidivism contributes more to high Q scores of females than does age; however, the differences between recidivists and nonrecidivists are not enough to use the Q score in identifying recidivists. the reverse scoring trends, which occur between female adult and female juvenile subjects, suggests that juvenile nonrecidivists may form a less homogeneous scoring group than do recidivists.

The present study also provides a synthesis and consolidation of prior research and documentation involving the use of the Q score with criminal populations. The Q score data of the present study does not differ from prior research by Porteus and others on means and standard deviations of delinquent samples. The means obtained by the present study for the C-V score are lower, although not to a significant degree, than those reported by Porteus. This is due, at least in part, to the difficult scoring technique which tends to be subjective in nature. The lower interscorer reliability coefficients between independent scorers for the C-V score reflect these difficulties. The reliability found for the abbreviated method of deriving the Q score is similar to the high reliability found by others.

The major implications of the present study include the generalizations of the results to other populations of female inmates. The results as to the relationship between recidivists and Qualitative scores are not conclusive, although a strong correlation was found between age and C-V scores. It is suggested that when variables are increased and more precise, the effectiveness of the Porteus Maze to identify female inmate subjects is enhanced. If the purpose for using the Q score is to identify female criminal subjects, it is recommended that the cutoff score be lowered to 29 when using the abbreviated scoring method. If the purpose is to order subjects, the abbreviated method is recommended because of the increased interscorer reliability and time saving. When used with other testing instruments, the relationship of higher Q scores for recidivists should enable a researcher to better predict the tendency for recidivism of female inmates. The maze behavior of the subjects adds support to the belief that many female criminals act in an impulsive manner, ignore instructions, and fail to profit from past experiences. This tendency is indicated by a higher Q score. A pragmatic application of Q score data would be the selection of inmates for intensive rehabilitation and educational programs who are most likely to respond to training, follow directions, and benefit from learning.

RECOMMENDATIONS

As a result of the study findings, the following recommendations are presented:

- Further study with the C-V score, particularly to simplify scoring techniques, should be made.

- Investigations of possible correlations of the C-V score with other measures of memory should be initiated to more accurately determine what the C-V score is measuring.

- The reason for the differences in scoring patterns by recidivists and nonrecidivists, between juvenile and adult subjects is not clear. Records of nonrecidivists should be monitored to determine if the subjects who obtained the high Q scores are the ones most likely to be returned to the correctional institutions.

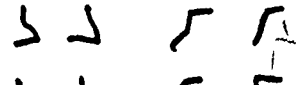
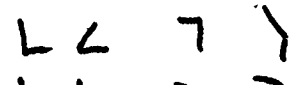
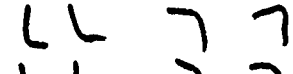
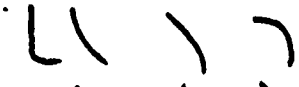
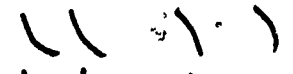
- Investigations of C-V score and Q scores for younger subjects should be made. Norms have not been established for Q scores for preadolescents. The Q score should have applications with younger subjects, particularly in inner city, high crime rate areas. The abbreviated Q score, which is fast and reliable, should make such studies practical.

- Although the relationship between Q scores and recidivism is not clear, followup studies should be made to determine the value of the Q score to select inmates for educational and rehabilitation programs.

The high reliability found for the abbreviated method of obtaining the Q score should increase its application to other target populations. The results confirmed the belief that recidivists and nonrecidivists who were inmates of correctional institutions for females would perform differently on the Qualitative score of the Porteus Maze Test.

Appendix A
Conformity-Variability Scoring

The following rules were devised by Porteus to measure paired similarities on Maze XI. Higher points were given for the closest similarities as shown by the response samples (Porteus, 1965, pp. 236-238).

Score Points	Characteristics	Sample Response
4	Right or near right angles.	
3-1/2	Near right angles, straight legs.	
3	Near right angles, legs not quite straight.	
2-1/2	Obtuse or acute angle straight legs.	
2	Same as aboye, legs not straight.	
1-1/2	Mixed angle and curve with changes in direction.	
1	Angles somewhat dissimilar, legs somewhat irregular.	
1/2	Two recognizable angles not similar.	
3-1/2	Very similar tight curves.	
3	Similar tight curves.	
2-1/2	Very similar round curves.	
2	Regular curves, one round, one flat.	
1-1/2	Very similar flat curves.	
1	Similar flat curves.	
1/2	Two recognizable curves, not similar.	

Appendix B
Qualitative Scoring

The following errors were marked on the face sheet, weighted, and totaled for the Q score (Porteus, 1965, p. 253).

Error Number	Characteristics	Weighting Factor
1.	Any blind alley entrance occurring in the first third of the design.	2
2.	Any blind alley entrance occurring in the last third of the design.	1
3.	Cut corner. Error must occur while turning corner.	1
4.	Crossed line. Error whenever pencil touches a line other than in turning corner.	2
5.	Lift pencil. Warning against lifting at the beginning and again after five pencil lifts in a single test or after 10 total lifts in any combination of tests.	3
6.	Wavy lines are recorded against subject if performance is similar in appearance or worse than example.	2
7.	Changed direction. When it is evident subject started to enter blind alley but changed direction before crossing imaginary line across opening.	1
8.	Any error occurring in Test VII obtains an added penalty of one point for each error.	0

The maximum weighted error score in any single type of error is 48. The maximum Q score is 100. No scoring was done during testing except "lift pencils" was noted on the back of each test design.

Appendix C
Abbreviated Q Scoring

The following two subscores which were found to contribute most to the total score were weighted and totaled for the abbreviated Q score (Barry, 1961, p. 291).

Subscore Number	Characteristics	Weighting Factor
1.	Crossed lines. Wherever the pencil mark touches a printed line is scored as a crossed line.	2
2.	Lift pencil. Warning is given against pencil lifts as for the standard scoring.	3

Appendix D
Qualitative Score and Conformity-Variability Score Data Analysis Procedure

The following statistical analysis procedures were used:

1. Pearson product-moment correlation was used for comparing C-V scores and Q scores. It was also used to obtain interscorer reliability. The formula for obtaining Pearson product-moment correlation is as follows:

$$r = \frac{\Sigma xy}{n\Sigma x \Sigma x}$$

2. Correlations between first offenders and recidivists Q scores and C-V scores were made by using the point-biserial formula:

$$r_{pb} \frac{\bar{X}_1 - \bar{Y}_0}{S_y} \sqrt{\frac{N_1 N_0}{N(N-1)}}$$

3. Partial correlation was used to measure the relationship between such variables as Q score and recidivism when the effects of another variable as age are held constant. The partial correlation formula is as follows:

$$r_{ab.c} = \frac{r_{ab} - r_{ac} r_{bc}}{\sqrt{1-r_{ac}^2}\sqrt{1-r_{bc}^2}}$$

4. The t Test of significance between related means was used to compare the Q scores obtained by the standard method of scoring and the abbreviated method:

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{\frac{\Sigma D^2 - \frac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

Appendix E
Total Testing Subject Scores.

TEXAS ADULT (TA) SUBJECT SCORES

SUB REFER NO.	SUB AGE	SUB REC	SUB PAR VIO	SUB FSC	SUB JUV COR	SUB IQ	SUB EDU ACH	TOTAL % SCORE	TOTAL ABE % SCORE	IMMED C-V SCORE	DELAY C-V SCORE
TACC1	27	YES	YES			104	C9.6	C36	C32	09.5	12.0
TACC2	23					C93	C9.1	---	1C1	C5.5	NA
TACC3	25					C99	C9.4	C59	C45	15.5	11.C
TACC4	26					C88	C8.0	---	C33	15.5	12.C
TACC5	27					112	1C.4	C53	C50	11.0	06.5
TACC6	37	YES				094	C9.0	---	C1C	12.C	NA
TACC7	27	YES				099	1C.7	030	C11	13.5	12.5
TACC8	22	YES				122	1C.4	C54	C54	C2.C	C7.C
TACC9	36					C86	C6.9	C31	C19	C9.C	CC.C
TAC1C	29					089	C6.2	C34	C26	14.C	1C.5
TAC11	28	YES	YES			120	C9.8	C46	C36	10.5	C7.5
TAC12	25					113	12.C	---	C44	17.C	11.C
TAC13	32					137	11.6	015	C15	16.C	14.5
TAC14	27					C87	C7.5	C51	C49	13.5	C6.C
TAC15	26					C97	C9.4	---	C45	NS	----
TAC16	32					104	C7.9	C35	C32	16.C	12.C
TAC17	33					C95	C6.7	C68	C52	08.C	NA
TAC18	29					108	C9.8	C49	C49	07.5	C6.5
TAC19	43	YES				C83	C8.8	C51	C46	1C,C	08.C
TAC2C	25					098	C8.2	---	C46	17.C	12.5
TAC21	39	YES				C94	C9.C	C23	C16	11.5	1C.5
TAC22	25	YES		YES	YES	103	C9.0	C41	C29	18.0	1C.5
TAC23	24					129	1C.4	CC7	CC6	14.5	11.5
TAC24	36					C99	11.3	C19	C21	1C.C	05.C
TAC25	22					121	C8.7	C1C	CC5	14.5	NA
TAC26	26	YES		YES	YES	C85	C5.2	C49	C39	12.5	11 C
TAC27	27					112	1C.1	---	C42	15.5	14 5
TAC28	4C	YES				C85	C5.1	---	C52	07.5	6 5
TAC29	22	YES		YES	YES	C93	C6.6	C63	C45	12.5	15 C
TAC3C	3C	YES			YES	089	C8.5	C97	C78	11.5	NA
TAC31	32	YES				C81	C7.9	---	C43	12.C	NA
TAC32	29	YES	YES			C82	C7.6	---	C32	C8.5	C5.5
TAC33	24	YES				109	C5.2	---	C5C	1C.C	NA
TAC34	27	YES			YES	102	1C.0	C54	C58	09.5	1C.C
TAC35	3C	YES	YES			C89	C7.9	---	C83	C4.5	NA
TAC36	25	YES	YES			081	C5.0	---	13C	NS	----
TAC37	21					139	12.0	C23	C18	09.0	NA
TAC38	36	YES	YES		YES	C93	C5.2	---	C61	NS	----
TAC39	37					112	C8.5	C41	C16	1C.5	C8.5
TAC4C	29					119	12.C	038	C35	12.5	11.5
TA041	33		YES			115	C8.7	111	109	11.0	07.5
TA042	36	YES		YES	YES	114	1C.C	C73	C58	12.C	09.0
TAC43	31	YES				109	11.6	C2C	C11	11.5	NA
TAC44	20					111	C9.C	C34	C3C	13.5	12 5
TAC45	20					124	C9.9	---	C23	C7.5	NA
TAC46	24					C94	C9.0	---	112	C9.C	C6.C

TA047	25				093	08.0	---	032	11.0	07.0
TA048	26				101	09.0	066	057	13.5	12.0
TA049	23				145	12.0	016	008	14.5	11.5
TA050	24				095	09.0	036	028	12.0	06.5
TA051	41				093	C7.7	---	075	08.5	NA
TA052	26				112	09.8	012	005	13.0	13.0
TA053	21				108	09.0	---	006	13.5	12.0
TA054	27	YES		YES YES	093	C8.5	039	031	15.5	15.5
TA055	24				104	C7.4	C42	C30	11.5	11.0
TA056	25				108	C9.6	---	C15	14.5	13.5
TA057	44	YES			C83	C8.C	C42	C32	19.5	NA
TA058	25	YES		YES YES	103	C4.2	---	C66	1C.5	09.C
TA059	38	YES			117	C7.9	018	C18	CC.7	C6.C
TA06C	34	YES			C80	C3.6	---	C90	NS	----
TA061	36	YES			113	C9.C	C34	C24	C7.C	C5.C
TA062	36				084	C7.3	C6C	C52	11.C	14.5
TA063	28	YES		YES	C96	C7.C	C21	C18	14.5	11.5
TA064	4C	YES	YES		C99	C6.1	C34	C24	18.C	16.5
TA065	23				141	1C.2	C18	C12	14.C	NA
TA066	24				120	1C.0	C69	C55	12.0	NA
TA067	31	YES			C98	C7.7	---	C35	09.5	07.5
TA068	4C				128	1C.4	C32	C23	16.0	12.5
TA069	24				129	1C.4	C13	C06	19.5	18.C
TA07C	47	YES		YES YES	100	1C.5	C39	C25	17.5	16.5
TA071	28				C88	C4.9	C33	C2C	16.5	12.5
TA072	2C	YES		YES YES	116	C6.9	C4C	C3C	11.C	1C.C
TA073	29				109	C9.4	C37	C29	1C.5	07.5
TA074	27				101	C5.1	---	C24	1C.0	09.5
TA075	27	YES	YES		107	C7.3	C3C	C11	18.5	17.5
TA076	29				081	C7.3	C34	C29	08.C	NA
TA077	28	YES			C85	C6.5	C73	C69	17.C	16.5
TA078	23				11C	C7.1	---	C59	12.C	1C.5
TA079	43	YES			088	C5.3	C74	C68	01.C	C3.5
TA08C	31	YES	YES		088	C6.7	134	1C9	1C.C	07.5
TA081	22			YES YES	C84	C7.C	C34	C33	1C.C	C7.5
TA082	36	YES		YES	132	11.C	C34	C27	12.C	1C.5
TA083	51	YES			C85	C7.8	C51	C34	05.5	GC.C
TA084	22			YES YES	C93	C7.4	---	C31	C7.0	1C.C
TA085	45	YES		YES YES	110	C6.C	C84	C88	C9.C	NA
TA086	34	YES		YES YES	C82	C6.1	---	C53	C9.5	NA
TA087	28	YES	YES		115	C9.8	---	C71	1C.5	13.5
TA088	29				C96	C9.8	---	C15	C9.5	C9.5
TA089	27			YES	108	C9.2	---	C54	1C.5	C4.5
TA09C	29				123	C9.6	CC6	CC6	14.C	13.C
TA091	24			YES	117	C9.8	---	C17	16.C	13.C
TA092	21				107	C9.4	058	C56	15.C	NA
TA093	28				C87	C6.2	---	CC8	19.5	19.5
TA094	24				129	12.C	---	C28	12.C	C9.C
TA095	39	YES		YES YES	C81	C5.2	---	1C9	NS	----
TA096	24				103	C3.2	C3C	C12	13.0	08.5
TA097	22		YES		C85	C6.6	---	C33	11.0	NA
TA098	26			YES	C91	C4.8	C6C	C49	11.5	NA
TA099	31			YES	102	C9.C	C33	C32	16.5	C9.5
TA1CC	3C	YES			C83	C7.2	---	C68	17.C	14.5
TA1C1	32	YES		YES	C87	C7.8	C42	C25	13.5	NA

TA102	26			YES	YES	088	06.1	---	047	12.5	10.5
TA103	27					105	10.7	---	036	07.5	04.0
TA104	20					088	05.3	---	014	14.0	NA
TA105	32	YES				108	09.6	---	008	12.0	07.5
TA106	38	YES				098	07.7	---	138	11.0	08.0
TA107	34				YES	082	07.5	---	041	17.0	15.0
TA108	26	YES				088	06.0	---	076	04.5	NA
TA109	24					098	09.0	032	029	10.0	NA
TA110	28					123	09.0	037	027	19.0	16.5
TA111	22					105	09.5	021	021	09.5	NA
TA112	27					098	09.6	---	036	10.0	NA
TA113	27	YES	YES			088	08.7	---	095	08.0	NA
TA114	37	YES		YES	YES	081	04.4	---	043	13.5	10.5
TA115	31	YES			YES	081	07.0	092	067	09.5	07.5
TA116	29			YES	YES	080	06.0	---	054	09.0	NA
TA117	36	YES				111	07.1	042	030	09.5	NA
TA118	21				YES	093	09.0	019	008	13.5	08.0
TA119	28			YES	YES	082	05.4	---	063	10.0	NA
TA120	21			YES	YES	102	07.9	---	047	12.5	07.0

OKLAHOMA JUVENILE (CJ) SUBJECT SCORES

SUB REFER NO.	SUB AGE	SUB REC	SUB PAR VIC	SUB ESC	SUB JUV COR	SUB IQ	SUB EDU ACH	TOTAL % SCORE	TOTAL ABB % SCORE	IMMED C-V SCORE	DELAY C-V SCORE
CJ121	17		---	---	---	125	----	015	012	14.0	11.0
CJ122	17	YES	---	---	---	121	----	044	026	15.5	14.0
CJ123	18	YES	---	---	---	107	----	012	004	12.0	09.5
CJ124	17		---	---	---	105	----	040	035	09.5	08.0
CJ125	17	YES	---	---	---	093	----	040	040	18.0	07.5
CJ126	17	YES	---	---	---	089	----	051	048	15.0	14.0
CJ127	17	YES	---	---	---	111	----	036	032	07.5	06.5
CJ128	14		---	---	---	106	----	033	029	10.0	07.5
CJ129	14		---	---	---	106	----	064	053	05.5	04.5
CJ130	15		---	---	---	104	----	055	039	19.5	17.0
CJ131	14		---	---	---	101	----	032	024	06.5	07.0
CJ132	15		---	---	---	092	----	032	030	07.5	08.5
CJ133	13	YES	---	---	---	089	----	066	043	10.0	09.0
CJ134	14		---	---	---	102	----	087	079	02.0	00.5
CJ135	15		---	---	---	102	----	081	084	08.5	04.5
CJ136	15		---	---	---	103	----	042	044	08.0	07.0
CJ137	15		---	---	---	101	----	103	091	12.5	11.0
CJ138	16		---	---	---	099	----	---	100	NS	----
CJ139	15	YES	---	---	---	099	----	048	039	11.5	10.0
CJ140	15		---	---	---	088	----	038	028	13.5	11.0
CJ141	15		---	---	---	092	----	094	092	11.0	11.0
CJ142	16	YES	---	---	---	119	----	040	040	11.0	09.5
CJ143	16		---	---	---	113	----	004	006	12.0	09.5
CJ144	17	YES	---	---	---	108	----	013	012	18.0	15.5
CJ145	16		---	---	---	103	----	029	023	09.0	08.0
CJ146	16		---	---	---	102	----	024	016	16.0	11.5
CJ147	16	YES	---	---	---	098	----	039	035	05.5	09.5
CJ148	16	YES	---	---	---	090	----	039	049	07.0	06.5
CJ149	16	YES	---	---	---	085	----	056	043	07.5	03.5
CJ150	16	YES	---	---	---	112	----	021	020	17.0	13.0

CJ151	16		---	---	---	109	----	032	015	15.5	15.5
CJ152	16	YES	---	---	---	107	----	013	009	12.5	08.0
CJ153	16		---	---	---	107	----	006	004	16.5	17.0
CJ154	16	YES	---	---	---	105	----	049	059	11.5	10.5
CJ155	17	YES	---	---	---	104	----	041	C42	09.0	12.5
CJ156	16	YES	---	---	---	103	----	025	C32	11.0	C6.0
CJ157	17		---	---	---	102	----	C38	C35	09.0	C8.C
CJ158	17	YES	---	---	---	101	----	C70	C67	C6.C	C5.C
CJ159	17	YES	---	---	---	100	----	058	C53	11.0	1C.5
CJ16C	17		---	---	---	C99	----	C28	C24	08.5	1C.C
CJ161	17	YES	---	---	---	C99	----	C41	C29	11.C	C9.5
CJ162	17		---	---	---	C93	----	12C	C92	08.C	C6.5
CJ163	17	YES	---	---	---	C89	----	C41	C45	C7.5	C6.C
CJ164	16	YES	---	---	---	C87	----	C32	C28	15.5	1C.C
CJ165	16	YES	---	---	---	C85	----	C46	C41	08.5	C2.C
CJ166	16		---	---	---	C85	----	C72	C62	16.5	17.5
CJ167	16	YES	---	---	---	C84	----	C7C	C58	C8.5	NA

LOUISIANA JUVENILE (LJ) SUBJECT SCORES

SUB REFER NO.	SUB AGE	SUB REC	SUB PAR VIC	SUB ESC	SUB JUV GOR	SUB IQ	SUB EDU ACH	TOTAL C SCORE	TOTAL ABB C SCORE	IMMED C-V SCORE	DELAY C-V SCORE
LJ168	16	YES	---	---	---	---	----	C72	C15	2C.C	19.C
LJ169	15		---	---	---	---	----	---	C39	13.C	C8.5
LJ17C	15		---	---	---	---	----	---	C51	C9.C	NA
LJ171	16	YES	---	---	---	---	----	C23	C14	14.5	13.5
LJ172	14		---	---	---	---	----	---	C51	1C.5	C7.5
LJ173	14		---	---	---	---	----	C38	C38	C8.C	C6.5
LJ174	14	YES	---	---	---	---	----	C79	C71	1C.5	C7.5
LJ175	15		---	---	---	---	----	C72	C47	17.C	C8.C
LJ176	13		---	---	---	---	----	---	C49	C6.C	C5.C
LJ177	16		---	---	---	---	----	---	C37	C7.5	C4.C
LJ178	14		---	---	---	---	----	---	C44	13.C	C8.C
LJ179	15		---	---	---	---	----	---	C58	C7.C	C4.5
LJ18C	15		---	---	---	---	----	C42	C41	NS	----
LJ181	15		---	---	---	---	----	---	C44	11.C	C7.C
LJ182	15		---	---	---	---	----	---	C56	C9.5	C5.C
LJ183	17		---	---	---	---	----	---	C47	1C.0	NA
LJ184	15		---	---	---	---	----	C69	C67	C8.5	C7.0
LJ185	13		---	---	---	---	----	C63	C53	11.C	C6.C
LJ186	17	YES	---	---	---	---	----	---	C77	C8.C	C5.5
LJ187	17		---	---	---	---	----	C77	C61	11.5	NA
LJ188	16		---	---	---	---	----	---	C66	11.5	C7.C
LJ189	16		---	---	---	---	----	C33	C27	C9.C	C7.C
LJ19C	15		---	---	---	---	----	---	C6C	1C.5	C7.C
LJ191	16		---	---	---	---	----	C36	C36	C8.5	C9.5
LJ192	14	YES	---	---	---	---	----	---	C62	C9.5	C5.C
LJ193	15		---	---	---	---	----	C2C	C18	1C.C	C9.5
LJ194	14		---	---	---	---	----	11C	1C1	NS	----
LJ195	17		---	---	---	---	----	049	C52	C9.5	C9.5
LJ1[illegible]	[illegible]	YES	---	---	---	---	----	045	C39	14.5	12.C
LJ197	15		---	---	---	---	----	C24	C17	17.5	NA
LJ19[illegible]	17	YES	---	---	---	---	----	---	C2[illegible]	12.5	C5.C
LJ196	16	YES	---	---	---	---	----	---	C45	14.C	11.C
LJ2CC	15		---	---	---	---	----	C51	C41	C9.5	C3.5

Appendix F
Independent Scorers Correlation

Scoring Pair	Standard Q Score	p	Abbreviated Q Score	p	Conformity-Variability	p
A & B	.956	.001	.959	.001	.747	.001
A & C	.919	.001	.932	.001	.889	.001
A & D	.929	.001	.930	.001	.894	.001
A & E	.904	.001	.937	.001	.653	.001
B & C	.974	.001	.992	.001	.865	.001
B & D	.937	.001	.905	.001	.921	.001
B & E	.964	.001	.966	.001	.734	.001
C & D	.909	.001	.895	.001	.836	.001
C & E	.948	.001	.959	.001	.669	.001
D & E	.952	.001	.928	.001	.826	.001

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