1959

A comparison of delinquent and non-delinquent male adolescents on the strong occupational level scale

Arnold Howard Evans
University of the Pacific

A COMPARISON OF DELINQUENT AND NON-DELINQUENT MALE ADOLESCENTS ON THE STRONG OCCUPATIONAL LEVEL SCALE

A Thesis

Presented to

the Faculty of the Department of Psychology

College of the Pacific

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

---

by

Arnold Howard Evans

June 1959

TABLE OF CONTENTS

CHAPTER PAGE

CHAPTER PAGE

LIST OF TABLES

LIST OF FIGURES

FIGURE PAGE

CHAPTER I

THE PROBLEM AND METHOD OF ATTACK

A major goal in the institutional treatment of the youthful offender is the provision of an individualized program of vocational training. Despite the critical importance of gainful employment in reducing the rate of recidivism among Youth Authority parolees, little is known of the vocational interests of delinquent adolescents.

I. THE PROBLEM

Statement of the problem. The problem with which this study was concerned was to determine what differences, measurable by the Occupational Level scale of the Strong Vocational Interest Blank For Men exist between comparable groups of delinquent and non-delinquent male adolescents.

The importance of the study. In the institutional setting, the mental hygiene value of usable manual skills provides a valuable adjunct to the therapeutic treatment of the emotionally maladjusted personality. In the community, occupational knowledge and experience afford the parolee a direct means of establishing his status on the labor market.

Recently, attention has been called to the importance of the Youth Authority ward's personal interests in securing

suitable employment. "Many wards have no inclination to use the carpentry, welding, shoe repair, and other types of training they may receive in an institution. They may have other skills, or family trades, that they wish to pursue."[1]

A prudent concern for the efficient use of the time and efforts invested in the institutional treatment of delinquency indicates the need for objective data concerning the vocational interests of Youth Authority wards.

II. METHOD OF ATTACK

The hypothesis. The null hypothesis to be tested is that no difference, other than difference attributable to chance, exists between the scores made on the Occupational Level scale of the Strong Vocational Interest Blank For Men by a group of California Youth Authority wards, and the scores made by a comparable group of non-delinquent junior high school and college students.

The instrument used. The Strong Vocational Interest Blank For Men (Revised) was developed by Professor Edward K. Strong, Junior, of Stanford University; and was copyrighted in its present form by the Stanford University Press in 1939.

---

[1]Norman D. Luce, "Let's Have Some Job-Getting Training," California Youth Authority Quarterly, 11:19, Summer, 1958.

Published in booklet form, this vocational inventory contains 400 items dealing with likes and dislikes in occupations, school subjects, amusements, activities, and personality traits. Also included are items concerning: order of preference of work, order of preference of men one would like most and least to have been, positions one would like most and least to hold in an organization, comparison of interests between paired items, and self-assessment of the subject's present abilities and traits.

The Strong Vocational Interest Blank was chosen as the measuring instrument to be used in this investigation for three reasons.

First, the validity of the Strong Vocational Interest Blank has been well established in the literature. Berdie,[2] confining himself primarily to studies of the Blank's validity published during and after 1950, cites ninety different research reports published during this period. Considerable evidence is available, therefore, concerning the empirical value of the Strong Vocational Interest Blank.

Second, the Strong Vocational Interest Blank can be administered in the same manner to large or small groups of subjects.

---

[2]Ralph F. Berdie, "Validity of the Strong Vocational Interest Blank" (Proceedings of the Conference on Interest Measurement, University of Minnesota, 1955).

Third, standard scores and occupational norms are available on the Strong Vocational Interest Blank for the purposes of comparing and interpreting group data.

The Occupational Level scale of the Strong Vocational Interest Blank measures the differences in interests between unskilled men on the one hand, and "business and professional men earning approximately $2,500 a year and upward,"[3] on the other. At the time of the development of this scale about one-seventh of the American population fell within this classification.[4]

Definitions of terms used. For the purpose of this investigation, a delinquent subject is defined as a person who is known to have committed two or more acts of legal delinquency; and who is a resident of an institution under the direction of the California Youth Authority.

A non-delinquent subject is defined as any junior high school or college student, eligible for inclusion in this investigation who is not known to school or juvenile authorities, as an attendance or behavioral problem.

---

[3]Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford University, California: Stanford University Press, 1943), p. 185.

[4]Ibid.

III. ORGANIZATION OF THE REPORT

Chapter II deals with a review of the literature related to this investigation. Chapter III describes the experimental design, the selection of the subjects, the control of group variables, and the procedures followed in the administration and scoring of the tests. The statistical data are analyzed in Chapter IV and qualitative interpretations are based upon the tests results in Chapter V. Chapter VI contains a summary of the data, conclusions, and recommendations for further research.

CHAPTER II

REVIEW OF THE LITERATURE RELATED TO THIS INVESTIGATION

The purpose of this chapter is to review the literature related to the present investigation.

I. LITERATURE ON THE VOCATIONAL STUDIES OF DELINQUENTS

Recognition should be given to the British for the first experimental study of the need for scientific techniques in the vocational guidance of delinquents. Rodger[1] gives an account of an experiment conducted in a Borstal institution for delinquent boys in England, to determine the value of psychological tests in assigning boys to suitable work. Only 45 per cent of the delinquents studied succeeded in jobs which were assigned them by the Chief Superintendent. When jobs were assigned the delinquents by a psychologist on the basis of vocational tests results 70 per cent of the groups studied were successful in their work.

Further study of the problem resulted in the publication of a monograph by a team of German investigators in

---

[1]A. Rodger, "A Borstal Experiment in Vocational Guidance," Report of the Industrial Health Board, 78:50 pp., 1937, London.

1939.[2] This paper discusses the role of the Nazi youth organizations in the prevention of adolescent delinquency. Materials presented include statistics on age, vocation, and sex; as well as data on the subjects' environmental factors, predispositions, and case histories. Waldheim,[3] in surveying the work records of 1700 delinquent boys in the care of a state school, reports that changes of employment are greater among delinquents than non-delinquents. His studies show also that the most favorable age for vocational choice is 16 years.

In America, Fornwalt[4] has demonstrated, in a study employing more than 400 subjects, that boys with definite vocational objectives are less truant, better adjusted to school and employment, and are more dependable and cooperative than boys without vocational aims. Holmes[5] administered "The General Mechanical Aptitude Test" to 176 men in 6 specific occupations, 1591 other mechanical and technical workers, and

---

[2]O. Doll, et al., "Delinquent Adolescents and their Vocations: A Study of Convicted Adolescents in Munich During 1937," Kriminalistik Abh, 42:195 pp., 1939.

[3]O. S. Waldheim, "The Causes of Vocational Instability of Dissocial Youths," Zentralblatt für Psychotherapie, 12:256, 1940.

[4]Russell J. Fornwalt, "Vocational Guidance for the Delinquent Boy," Occupations, 25:149-51, December, 1946.

[5]Jack Alroy Holmes, "Occupational Aptitudes of Delinquents," Journal of Genetic Psychology, 78:47-54, 1951.

60 delinquent boys. He concludes; "When compared with a large number of people engaged in mechanically and technically related fields, the delinquent boys closely approximate the general norm."[6]

Significant findings concerning the scope of this problem were reported by Corsini,[7] who analyzed the stated interests of 538 reformatory inmates. Mechanical work comprised two-thirds of the expressed interests. Less than half of the men responding indicated that they were obtaining the training they desired through their institutional assignments. Reformatory inmates aim higher than they will probably succeed. Over 10 times as many men want to enter the skilled trades as are in these trades.

Green and Davis,[8] in England, studied an experimental group of 152 boys on probation from approved schools, and a control group of equal size. The delinquents were found to be inferior to the controls in regard to intelligence test scores. Although the delinquents were employed in less skilled jobs than the controls, no over-all association was found between intelligence and level of employment.

---

[6] Ibid.

[7] Raymond J. Corsini, "Vocational Interests of Juvenile Delinquents," Journal of Correctional Education, 3:11-16, 1951.

[8] B. R. Green and Davis, D. Russell, "The Employment History of Approved School Boys," British Journal of Delinquency, 2:303-10, 1952.

No studies employing the Strong Vocational Interest Blank with delinquents could be discovered in the research literature.

II. LITERATURE ON THE STRONG VOCATIONAL INTEREST BLANK FOR MEN (REVISED)

Since the publication of the revised form, (M), of the Strong Vocational Interest Blank in 1938, numerous studies have attempted to evaluate the reliability and validity of this inventory, as well as the stability of the interests it measures.

Strong[9] reported the average coefficient of reliability for 36 of the revised scales for men as .877; based on the records of 285 Stanford seniors. In 1943, using 20 occupational scales on a group of 148 high school juniors, with the interval between tests varying from 9 to 21 months, Strong obtained an average reliability coefficient of .83.[10]

Carter,[11] on the basis of his own research, concludes: ". . .such evidence as is available shows that the Strong

---

[9]Edward K. Strong, Jr., Vocational Interests of Men And Women (Stanford University California: Stanford University Press, 1943), p. 77.

[10]Ibid., p. 372.

[11]Harold D. Carter, "The Development of Vocational Attitudes," Journal of Consulting Psychology, 4:190, 1940.

scales are probably almost, but not quite, as reliable and stable when used at the high school level as when used with adults."

Reliability for the Occupational Level scale, on the basis of the standardization data, is reported by Strong as .875.[12]

The validity of a test is an expression of how well it performs the function for which it was designed. In 1949, Strong conducted a follow-up study of 663 Stanford students who had been tested, on the average, eighteen years earlier while they were in college.[13] Strong found that the groups had made an average standard score, while in college, of 43.6 (equivalent to a B plus letter grade) on the keys appropriate to the occupations in which they were engaged in 1949. This figure Strong estimates to be about 85% of the maximum attainable value of any cross-validation sample.

For sixteen of the original occupational keys, Strong derived expectancy ratios. On the average, the chances are 3.5 to 1 that an A rating in college on one of the sixteen occupational keys successfully predicts employment in the named occupation eighteen years later.

---

[12]Strong, op. cit., p. 189.

[13]Edward K. Strong, Jr., Vocational Interests 18 Years After College (University of Minnesota Press, 1955).

The evidence for the stability of the interests measured by the Strong Blank points towards response variability for test items, but high test consistency in terms of patterns of occupational interests. Stordahl,[14] in his dissertation, reports a follow-up study of a group of high school seniors first tested in 1949. Of this group 181 were located, divided into metropolitan and non-metropolitan subsamples, and retested in 1951. The median test-retest correlation obtained for the metropolitan sample was .72, as compared with .67 for the non-metropolitan sample. Using Kendall's coefficient of concordance, Stordahl studied the intra-individual stability of his younger cases over a period of two years. He gives the following summary of his data: "The median coefficient of concordance for the metropolitan group was .87, and the median for the non-metropolitan group was .86. In terms of Spearman's rho these figures would be .74 and .72. All but nine of the coefficients for the metropolitan group, and six for the non-metropolitan group were found to be significantly greater than zero."[15] Hoyt,[16] pursuing the line of investigation used in

---

[14]Kenneth E. Stordahl, "The Stability of Strong Vocational Interest Blank Patterns for Pre-College Males" (unpublished Doctoral dissertation, The University of Minnesota, 1953).

[15]Ibid., p. 62.

[16]Donald P. Hoyt, "Measurement and Prediction of the Permanence of Interests" (Proceedings of the Conference on Interest Measurement, University of Minnesota, 1955).

Stordahl's study for two additional years, was able to retest 121 students out of the original sample when they became college seniors. As an independent check upon the significance of his data, Hoyt incorporated in his study an objective criterion for judging the meaning of a particular rank-order correlation obtained from two measurements of the same subject. Experience judges rated the two interest profiles for 72 subjects on a five-point scale defining the amount of difference in clinical interpretations that a counselor would make on the second tests, as compared with performance on the first test. The results of Hoyt's study support the following conclusions: "When the rank-order correlation between the individual's first and second testing reaches or exceeds .75, experienced counselors make essentially the same interpretation of the two profiles. If the test-retest correlation ranges from .65 to .75, the two testings show at least one important difference in interpretation. Test-retest rank-order values below .65 may result in considerable differences in interpretation and represent major changes in interest patterns."[17]

Previous studies indicate that the reliability, validity, and stability of the interests measured by the Strong Vocational Interest Blank justify its use in the context of the present investigation.

---

[17] Ibid.

III. LITERATURE ON THE OCCUPATIONAL LEVEL SCALE

A review of the research literature concerning the experimental investigation of the factor of factors measured by the Occupational Level scale reveals the existence of three basic theoretical approaches to its definition:

1. Studies concerning the relationship between Occupational Level scores and academic aptitude.
2. Studies concerning the relationship between Occupational Leve scores and aspiration level.
3. Studies concerning the relationship between Occupational Level scores and socio-economic variables.

Studies concerning the relationship between Occupational Level scores and academic aptitude. Numerous investigators have hypothesized the existence of a positive relationship between level of occupational interests and scholastic ability. As the following studies show, the evidence on this theory is inconclusive at present.

Strong[18] conducted one of the earliest tests of this hypothesis. Students in the Graduate School of Business at Stanford University were divided into four groups on the basis of scholastic grades for one year. The students in the upper

---

[18]Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford University, California: Stanford University Press, 1943), p. 201.

fourth averaged 60.0 on the Occupational Level scale, while the students in the lower fourth averaged 59.0. This difference was statistically insignificant. The average for all four groups was nine-tenths of one standard score point higher than for Stanford seniors ten years after graduation. Strong concluded that his sample was too restricted to adequately test the hypothesized relationship between level of occupational interests and scholastic ability.

In 1944, Berdie[19] reported a correlation of .03 between the Occupational Level scores and academic achievement of 43 engineering students.

Kendall[20] studied 300 male college freshmen at three levels of Occupational Level score. The three groups were found to differ significantly in regard to scholastic achievement as measured by honor-point ratio, and in regard to academic ability as measured by the Ohio State Psychological Examination. When academic ability was held constant, the groups were found to differ with respect to achievement; but the difference was not held to be statistically reliable. Kendall concluded the Occupational Level scale appears to

---

[19]Ralph F. Berdie, "Prediction of College Satisfaction And Achievement," Journal of Applied Psychology, 28:239, 1944.

[20]William E. Kendall, "The Occupational Level Scale of the Strong Vocational Interest Blank for Men," Journal of Applied Psychology, 31:283, July, 1947.

measure a variable related in part to scholastic ability, and in part to motivational factors.

Ostrom,[21] repeated Kendall's study utilizing six groups, instead of three, and a more rigid control of the Occupational Level and intelligence variables. He reported an even step progression in honor point ratios from low to high Occupational Level scores, and from low to high intellectual ability; except for one discrepancy in the instance of "average to high" Occupational Level scores in the low ability group. Ostrom concluded that the Occupational Level scale might be employed profitably in a battery of tests for predicting academic success.

In a later study based on the responses of 200 twelfth grade boys enrolled in four high schools, Ostrom[22] failed to confirm the predicted relationship between Occupational Level scores and average high school grades. In this study Ostrom divided the 200 boys into two groups; one with high Occupational Level scores and the other with low Occupational Level scores. Testing whether the groups varied significantly in

---

[21]Stanley R. Ostrom, "The Occupational Level Key of the Strong Vocational Interest Blank and Scholastic Success at College Freshman Level," Journal of Applied Psychology, 33:51, February, 1949.

[22]Stanley R. Ostrom, "The Occupational Level Key of the Strong Test and Drive at the Twelfth Grade Level," Journal of Applied Psychology, 33:240, June, 1949.

regard to scholastic achievement, Ostrom's analysis of the honor-point ratios yielded an F-ratio of 5.66; which fell between the .05 and .01 levels of comfidence. However, when academic aptitude, as measured by the American Council on Education Psychological Examination, was partialed out by means of analysis of coveriance, the difference in academic grade averages due to Occupational Level yielded an F-ratio of .7; justifying the retention of the null hypothesis.

Gustad,[23] working at the senior college level, examined the capacity of the Occupational Level Scale to predict differential success in terms of course material. He was unable to ascertain any relationship between Occupational Level scores and scholastic success within advanced major fields; even when the students were pursuing curricula appropriate to their measured interests. Gustad concluded, as did Strong earlier, that the range of variables, Occupational Level scores, grades, and scholastic ability, was too narrowly distributed in his sample to permit an unbiased test of the hypothesis under investigation.

Studies concerning the relationship between Occupational Level scores and aspiration level. After extensive counseling

---

[23]John G. Gustad, "Academic Achievement and Strong Occupational Level Scores," Journal of Applied Psychology, 36:75, April, 1952.

experience with the Strong Vocational Interest Blank, Darley[24] published the following definition of the Occupational Level scale: "Occupational Level, a quantitative statement of the eventual adult 'level of aspiration,' represents the degree to which the individual's total background has prepared him to seek the prestige and discharge the social responsibilities growing out of high income, professional status, recognition, or leadership in the community; at the lower end of the scale the individual's background has prepared him for the anonymity, the mundane round of activities, and the 'followership' status of a great majority of the population."

Elsewhere, Darley has stated: "I am becoming clinically more convinced. . .that the Occupational Level score is an excellent quantitative statement of a form of motivation or level of aspiration or some other dynamic aspect that is. . . referred to in the literature as 'drive'."[25]

The validity of the Occupational Level score as a quantitative index of "drive" or aspiration level has proven to be a controversial topic. Although clinically satisfactory, such a construct does not lend itself readily to experimental

---

[24]John G. Darley, Clinical Aspects and Interpretation of the Strong Vocational Interest Blank (New York: Psychological Corporation, 1941), p. 60.

[25]Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford University, California: Stanford University Press, 1943), p. 465.

verification. Nevertheless, such evidence as the research literature provides, points towards the utility of a more parsimonious denotation of the Occupational Level score.

Strong[26] has reported the Occupational Level scores earned by 190 district forest rangers, 100 supervising rangers, 20 assistant administrators, and 16 administrators employed in the United States Forest Service. The mean scores of the four groups were 55.1, 58.8, 57.9, and 64.1, respectively. The discrepant relationship between the scores of the assistant administrators and the supervisors was explained by Strong on the grounds that, while the assistant administrators received larger salaries, they were not actually heads of operating units, as were the supervisors.

Handelsman[27] attempted to determine the relationships between Occupational Level scores, laboratory tests of aspiration level, teachers' ratings and students' self-ratings of aspiration level. He also attempted to discover whether a relationship exists between Occupational Level scores and scholastic and extra-curricular achievement. His subjects were 132 male students in the junior and senior classes of two suburban high schools. His data showed that Occupational Level

---

[26] Ibid., pp. 202-203.

[27] Irving Handelsman, "The Relationship Between Occupational Level Scores and Various Measures of Aspiration and Achievement," Chapter III, Psychological Monographs, 66:10, 1952.

scores were positively, but not significantly related to the teachers' ratings of the students' aspiration level. No significant relationships were found between Occupational Level scores and the laboratory tests of aspiration level. With intelligence, as measured by the Otis Self-Administering Test of Mental Ability (Higher Form A) held constant, there was no statistically significant relationship between the Occupational Level scores and academic achievement. This was true, also, of the relationship between Occupational Level scores and extra-curricular achievement. Handelsman concluded: "The interpretation of the Occupational Level scale as a measure of level of aspiration is apparently not warranted. The Occupational Level score is so constructed that it should indicate the socio-economic level of an individual's interests, but there is no evidence to suggest that it measures his level of aspiration or drive."[28]

Studies concerning the relationship between Occupational Level scores and socio-economic variables. Nearer in form to the research context employed in this paper are those studies which examine a hypothetical relationship between Occupational Level scores, and one or more socio-economic variables. The

---

[28]Gordon J. Barnett, et al., "The Occupational Level Scale as a Measure of Drive," Psychological Monographs, 66:17, 1952.

findings in this area are clearer, when compared with the previously mentioned studies; although less productive, in terms of the clinical insights that may be gleaned from them.

Barnett[29] interviewed 763 unemployed men, defined as chronically or non-chronically unemployed, as they went through a social agency in a metropolitan city. In both groups high negative correlations were found between Occupational Level scores and satisfaction with unemployment (chronics, -.73, non-chronics, -.68, both significant at the .01 level of confidence). Non-chronically unemployed had significantly higher average Occupational Level scores than the chronically unemployed; and the occupations of their fathers were also significantly higher than was true for the chronically unemployed. Barnett concluded: "These data cannot be said to have demonstrated that the Occupational Level scale measures drive. They have shown that it is related to status satisfaction, and that it is not simply a measure of parental socio-economic level. . .Perhaps the Occupational Level scale measures just what its method of construction suggests: the occupational level to which the individual's interests correspond."[30]

---

[29]Gordon J. Barnett, "Level of Occupational Interests and Satisfaction with Chronic Vagrancy," Chapter II, Psychological Monographs, 66:4, 1952.

[30]Ibid., p. 12.

Stewart[31] presents data for 136 high school juniors and seniors who were sons of skilled workmen. In addition to Occupational Level scores, he collected information by means of a questionnaire covering the subject's activities and family background. He found that the Occupational Level scores of his subjects were slightly related to the occupational status of their maternal grand-parents, and to the religious background of the family. The scores were also found to be related to membership in school organizations and types of summer work; as well as to the subject's immediate vocational and educational goals. Subjects expecting to go to college scored significantly higher than those who planned to get a job, or continue technical training, following high school.

Super,[32] in his synthesis of the findings of three of his students, aptly summarized the conclusions of several investigations concerning the utility of the Occupational Level scale in psychological research: "It is a measure of similarity of interests to those of men at different points of the socio-economic scale. It does indicate the level at

---

[31]Lawrence H. Stewart, "The Relationship of Certain Social Factors to Occupational Level as Measured by Strong's Vocational Interest Blank," Chapter IV, Psychological Monographs, 66:18, 1952.

[32]Donald E. Super, "The Meaning of Occupational Level as Measured by Strong's Blank," Chapter V, Psychological Monographs, 66:22, 1952.

which one may be expected to find means of satisfying his interests. The evidence so far available warrants our interpreting the Occupational Level score as a measure of status of interests."[33]

IV. LIMITATIONS OF PREVIOUS STUDIES

The subject of vocational guidance in the rehabilitation of delinquent youth is of practical interest to the correctional educator, and to the community parole agent. A review of the research literature indicated that no attempt had been made experimentally to determine whether the level of occupational interests of delinquents differ significantly from those of non-delinquents. This investigation was undertaken in an attempt to fulfill that need.

V. SUMMARY

The research literature related to this study was reviewed. Some of the literature on the vocational studies of delinquents indicated a need for an adequate vocational counseling service in the institutions charged with developing their occupational skills.

Studies concerned with the reliability, and validity of the Strong Vocational Interest Blank scores, as well as the

---

[33] Ibid., p. 29.

stability of the interests they measure, were summarized. The use of the Strong Vocational Interest Blank in the context of the present investigation is not inconsistent with the findings of previous research in this area.

The experimental data concerning the theoretical relationships between Occupational Level scores, academic aptitude, aspiration level, and socio-economic variables was given. Evidence concerning a hypothetical relationship between academic aptitude and Occupational Level scores is inconclusive at present. The interpretation of the Occupational Level scale as a measure of "drive" or aspiration level is experimentally unsatisfactory. Earlier investigations have uncovered significant relationships between socio-economic variables and Occupational Level scores.

CHAPTER III

THE EXPERIMENTAL DESIGN

This chapter describes the experimental design, the selection of the subjects, the control of group variables, and the techniques employed in administering and scoring the Strong Vocational Interest Blank.

I. THE EXPERIMENTAL DESIGN

Two groups of subjects were selected for this study; one from a training school of the California Youth Authority, and the other from students in attendance at 3 junior high schools and 1 lower division college in the city of Stockton. The Strong Vocational Interest Blank For Men (Revised) was administered to both of these groups. The blanks were scored on the Occupational Level scale and the results analyzed for differences between the two groups.

II. SELECTION OF THE SUBJECTS

The parent population of the delinquent sample were male Youth Authority wards in residence at the Preston School of Industry near Ione, California. Efforts were made to locate those wards who possessed the level of reading ability necessary to understand the directions printed on the test.

From this group only those were selected who had committed at least two, and preferably three acts of legal delinquency.[1]

The non-delinquent subjects were obtained from male students in attendance during the fall semester of 1958 at Franklin Junior High School, Edison High School, and Stockton College. Initially, subjects were selected on the basis of level of reading ability. This list was then submitted to the Dean of Boys, and the Attendance Office, at each school. Those students known to school or juvenile authorities, as attendance or behavioral problems, were identified and omitted from this investigation. Cards containing the written consent of the parents of the non-delinquent subjects for testing purposes were requested and obtained.

The total number of the subjects who participated in this study is 96.

III. CONTROL OF GROUP VARIABLES

The delinquent and non-delinquent samples were carefully matched in regard to the variables of age, education, intelligence, reading level, racial group, and fathers' occupational level.

Age. Table I shows the results of the matching of the age variable in the samples. The mean and standard deviation

---

[1]Consult Appendix I for the specific nature of these offenses.

TABLE I

AGE DISTRIBUTION IN YEARS AND MONTHS OF YOUTH AUTHORITY WARDS AND NON-DELINQUENT JUNIOR HIGH SCHOOL AND COLLEGE STUDENTS

YOUTH AUTHORITY WARDS N = 48				NON-DELINQUENT STUDENTS N=48				
16 N=11	17 N=22	18 N=13	19 N=2	15 N=9	16 N=13	17 N=15	18 N=10	19 N=1
16^{3}	17^{0}	18^{0}	19^{3}	15^{1}	16^{1}	17^{0}	18^{1}	19^{0}
16^{4}	17^{1}	18^{1}	19^{3}	15^{6}	16^{2}	17^{1}	18^{2}	
16^{6}	17^{1}	18^{1}		15^{7}	16^{4}	17^{1}	18^{3}	
16^{7}	17^{2}	18^{3}		15^{8}	16^{4}	17^{2}	18^{3}	
16^{7}	17^{3}	18^{3}		15^{8}	16^{5}	17^{2}	18^{4}	
16^{8}	17^{3}	18^{3}		15^{8}	16^{5}	17^{3}	18^{4}	
16^{8}	17^{4}	18^{4}		15^{10}	16^{6}	17^{3}	18^{6}	
16^{8}	17^{4}	18^{5}		15^{10}	16^{7}	17^{4}	18^{8}	
16^{10}	17^{5}	18^{5}		15^{10}	16^{8}	17^{5}	18^{10}	
16^{11}	17^{5}	18^{6}			16^{8}	17^{5}	18^{10}	
	17^{5}	18^{8}			16^{9}	17^{5}		
	17^{6}	18^{9}			16^{10}	17^{6}		
	17^{6}	18^{11}			16^{11}	17^{6}		
	17^{7}					17^{11}		
	17^{8}					17^{11}		
	17^{8}							
	17^{9}							
	17^{9}							
	17^{9}							
	17^{11}							
	17^{11}							

Range = 37 months	Range = 48 months
$M = 17^{7}$	$M = 17^{1}$
s = 9.05	s = 12.12

of the ages show them to be comparable groups; although there is a greater range of ages reported for the non-delinquent sample because of the inclusion of 9 cases at the 15 year-old level.

Education. Table II compares the grade placement scores of the Youth Authority wards with the level of educational achievement in years and months attained by the subjects in the non-delinquent sample.

The figures reported for the non-delinquent sample represent a conservative approximation of the actual distribution of the education variable within this group. These data were obtained in Low and High catagories from the public schools; whereas the Youth Authority records contained the year expressed to the nearest month by means of a decimal figure.

In order to match the groups, the investigator felt it was necessary to express the data in the same numerical units. To do this, it was necessary to establish class intervals of 0-5, and 5-9, for the Low and High categories, respectively. An effort to control statistical bias was made by rounding the data for the educational variable in the non-delinquent sample at random.

The mean and standard deviation of the grade placement and educational achievement scores show that the groups are

TABLE II

GRADE PLACEMENT SCORES OF YOUTH AUTHORITY WARDS COMPARED WITH LEVEL OF EDUCATIONAL ACHIEVEMENT IN YEARS* AND MONTHS OF NON-DELINQUENT JUNIOR HIGH SCHOOL AND COLLEGE STUDENTS

Youth Authority Wards N=46							Non-Delinquent Students N=46				
8	9	10	11	12	13	14	9	10	11	12	13
N=8	N=6	N=12	N=8	N=3	N=10	N=1	N=6	N=14	N=12	N=7	N=9
81	91	10^{1}	11^{1}	12^{3}	13^{0}	14^{5}	95	10^{0}	11^{0}	12^{0}	13^{0}
81	93	10^{2}	11^{2}	12^{4}	13^{1}		95	10^{0}	11^{0}	12^{0}	13^{0}
83	94	10^{2}	11^{3}	12^{4}	13^{1}		98	10^{5}	11^{0}	12^{0}	13^{0}
86	95	10^{2}	11^{3}		13^{3}		99	10^{5}	11^{5}	12^{5}	13^{5}
87	98	10^{4}	11^{3}		13^{3}		99	10^{5}	11^{5}	12^{5}	13^{5}
89	99	10^{4}	11^{5}		13^{4}		99	10^{5}	11^{5}	12^{5}	13^{5}
89		10^{6}	11^{5}		13^{5}			10^{5}	11^{5}		13^{5}
89		10^{6}	11^{7}		13^{6}			10^{5}	11^{5}		13^{5}
		10^{7}			13^{7}			10^{5}	11^{5}		
		10^{8}			13^{9}			10^{5}	11^{5}		
		10^{9}						10^{9}	11^{9}		
		10^{9}						10^{9}	11^{9}		
								10^{9}			
								10^{9}			
								10^{9}			
Range = 6^{5}				*Figures are given in school years							Range = 4^{1}
M = 10^{9}				1 year = 9 calendar months							M = 11^{4}
s = 1.73											s = 1.19

comparable in regard to the education variable; although there is a greater range of scores reported for the delinquent sample because of the inclusion of 8 cases at the eighth grade level, and 1 at the fourteenth grade level.

Intelligence. Table III shows the distribution of intelligence quotients (Total Mental Factors) for the two groups as attained on the short form of the California Test of Mental Maturity, with two exceptions: one score in the delinquent sample was obtained from a Raven Progressive Matrice's percentile, and one score in the non-delinquent sample was obtained on the Otis Self-Administering Test of Mental Ability.

These data show that the groups are very similar in regard to the intelligence variable; although a tendency towards a greater number of cases at the extremes of the distribution is noticeable in the non-delinquent sample.

Reading level. Disagreement exists in the research literature concerning the reading difficulty of the Strong Vocational Interest Blank.

Johnson and Bond[2] applied the Flesch formula for determining level of reading difficulty to the instructions and items contained in the Strong Vocational Interest Blank. Their

---

[2]Ralph H. Johnson, and Bond, Guy L., "Reading Ease of Commonly Used Tests," Journal of Applied Psychology, 34:319, October, 1950.

TABLE III

DISTRIBUTION OF INTELLIGENCE QUOTIENTS OBTAINED ON THE CALIFORNIA TEST OF MENTAL MATURITY (SHORT FORM) OF YOUTH AUTHORITY WARDS AND NON-DELINQUENT JUNIOR HIGH SCHOOL AND COLLEGE STUDENTS

Youth Authority Wards N = 48					
70-79.9	80-89.9	90-99.9	100-109.9	110-119.9	120-129.9
N=1	N=2	N=13	N=22	N=9	N=1
75	82	90	100 106	111	125
	89	91	100 106	111	
		92	101 106	115	
		92	102 106	116	
		92	103 106	116	
		93	103 107	117	
		93	103 107	117	
		93	104 107	117	
		94	105 108	118	
		96	105 109		
		96	105 109		
		98			
		99			

Range = 51
M = 103
s = 9.94

TABLE III (continued)

Non-Delinquent Students N = 48

80-89.9	90-99.9	100-109.9	110-119.9	120-129.9
N=6	N=9	N=15	N=12	N=6
82	93	100	110	120
82	94	101	111	120
86	96	101	111	120
88	96	101	111	122
88	97	101	114	123
89	97	102	114	128
	98	102	114	
	98	103	115	
	99	103	115	
		104	115	
		106	116	
		107	117	
		108		
		109		
		109		

Range = 47
M = 105
s = 11.05

analysis placed the reading difficulty of the inventory at the 15th year level.

Stefflre,[3] however, using the Lewerenz Formula for Vocabulary Grade Placement, assigned a grade level of 10^4 to the Strong Vocational Interest Blank. This indicates that the inventory is within the vocabulary range of the typical tenth grader, and the more able ninth grader.

Using the Yoakum Readibility Formula,[4] the investigator obtained a third reading level score of 13^7 for the Strong Blank. The average of the three scores is 13^0.

Table IV shows the data on the combined reading scores, (vocabulary and comprehension) for the two groups. The reading scores of the Youth Authority wards were obtained on the California Achievement Test (Elementary Form); while the scores of the non-delinquent students were obtained on the Stanford R Reading Achievement Test (Advanced Battery).

Since the mean reading scores for the delinquent and non-delinquent samples are 11^8 and 10^5, respectively, it may appear that the estimated reading level of the Strong Blank is higher than the tested reading ability of the subjects in this study. Of the reading scores given in the data for the

---

[3]Buford Stefflre, "The Reading Difficulty of Interest Inventories," Occupations, 26:95, 1947.

[4]Gerald A. Yoakum, Basal Reading Instruction (New York: McGraw-Hill Company, 1955), p. 329.

TABLE IV

DISTRIBUTION OF TOTAL READING SCORES (VOCABULARY AND COMPREHENSION) IN YEARS* AND MONTHS OF YOUTH AUTHORITY WARDS AND NON-DELINQUENT JUNIOR HIGH SCHOOL AND COLLEGE STUDENTS

Youth Authority Wards N = 48							Non-Delinquent Students N = 48			
9	10	11	12	13	14	15	9	10	11	12
N=7	N=9	N=8	N=8	N=9	N=6	N=1	N=13	N=20	N=11	N=4
90	10^0	11^0	12^0	13^0	14^0	15^8	90	10^0 10^4	11^0	12^0
90	10^0	11^2	12^1	13^2	14^3		90	10^0 10^5	11^1	12^0
94	10^0	11^3	12^1	13^2	14^4		91	10^0 10^5	11^1	12^3
94	10^0	11^3	12^1	13^2	14^5		91	10^0 10^5	11^1	
94	10^2	11^3	12^2	13^2	14^6		94	10^0 10^7	11^4	
96	10^7	11^6	12^3	13^2	14^9		94	10^0 10^8	11^4	
97	10^7	11^6	12^5	13^4			95	10^1 10^8	11^5	
	10^8	11^7	12^7	13^5			96	10^2 10^8	11^6	
	10^9			13^5			97	10^4 10^8	11^7	
							97	10^4 10^8	11^8	
							98		11^9	
							98			
							99			
Range = 6^9			*Figures are given in school years						Range = 3^4	
M = 11^8			1 year = 9 calendar months						M = 10^5	
s = 1.73									s = .887	

non-delinquent students 19 were obtained on reading tests given two to three years prior to the present study, and 21 of the remaining reading scores were obtained on tests given a year or more before this study was undertaken.

Of the reading scores given in the data for the Youth Authority wards at least 5 were obtained on reading tests given a year or more prior to the present study.

Because of insufficient data concerning the growth of 45 of the subjects' reading skills over an interval of one to two years prior to the time this study was undertaken the investigator believes that the reading ability of these subjects was higher than the mean scores given in Table IV indicate, when the Strong Vocational Interest Blank was administered to them.

To obviate the possibility of misunderstanding the instructions, the investigator explained the answering techniques for each part of the inventory to the subjects in this investigation. In addition, efforts were made during the administration of the test to answer all questions regarding the meaning of difficult terms.

The data given in Table IV show that the delinquent sample is clearly superior to the non-delinquent sample in regard to level of reading ability. This inequality between the groups could be the result of the remedial reading instruction given to wards of the Youth Authority. The likelihood of the difference in reading ability influencing to a

significant degree the results of the tests is very small; since the subjects were given ample time to read and answer all the items on the Strong Vocational Interest Blank.

Racial group. Table V shows the results of the control of the racial variable between the groups. Approximately the same ratio of Caucasian students to students of minority group background was maintained within the samples. No Negro student could be found, who satisfied the requirements of this investigation, within the school populations surveyed.

Fathers' occupational level. Table VI provides a classification of the occupational status of the fathers of the boys in the delinquent and non-delinquent samples.

A more rigorous control of the socio-economic variable between the delinquent and non-delinquent samples in this investigation would have been desirable. Unfortunately the detailed information this would require was not available in the records of the Youth Authority or the Stockton Unified School District.

The present classification was made with the aid of the "Dictionary of Occupational Titles";[5] and has the further advantage of permitting the comparison of the expressed level

---

[5]Division of Occupational Analysis, "Dictionary of Occupational Titles, Part IV: Entry Occupational Classification," United States Government Printing Office, October, 1944.

TABLE V

FREQUENCY DISTRIBUTION OF RACIAL GROUPS REPRESENTED IN TWO SAMPLES CONVERTED TO APPROPRIATE PERCENTAGES

Youth Authority Wards N=48			Non-Delinquent Students N=48		
Racial Group	f	%	Racial Group	f	%
Caucasian	43	89.6	Caucasian	41	85.4
Spanish American	4	8.3	Spanish American	7	14.6
Negro	1	2.1	Negro	0	00.0

TABLE VI

FREQUENCY DISTRIBUTION OF FATHERS' OCCUPATIONAL LEVEL FOR THE TWO SAMPLES CONVERTED TO APPROPRIATE PERCENTAGES

Youth Authority Wards N=48			Non-Delinquent Students N=48		
Fathers' Occupational Level	f	%	Fathers' Occupational Level	f	%
Professional	2	4.17	Professional	0	0.00
Business	3	6.25	Business	1	2.08
Managerial	3	6.25	Managerial	1	2.08
Semi-Managerial	2	4.17	Semi-Managerial	2	4.17
Clerical	1	2.08	Clerical	0	0.00
Skilled Labor	4	8.33	Skilled Labor	6	12.50
Semi-skilled Labor	12	25.00	Semi-skilled Labor	10	20.83
Unskilled Labor	10	20.83	Unskilled Labor	16	33.34
Unemployed	1	2.08	Unemployed	1	2.08
Retired	0	0.00	Retired	1	2.08
Unknown	8	16.66	Unknown	10	20.83
Deceased	2	4.17	Deceased	0	0.00
Total	48	99.99	Total	48	99.99

of occupational interest of the subjects with the achieved occupational status of the male parents.

These data show that the groups are comparable in terms of the occupational status levels of the male parents of the subjects. About as many more cases fall at the upper limit of the classification in the delinquent sample, as occur at the unskilled level of the classification in the non-delinquent sample. In proportion to the total number of subjects who participated in this investigation, these differences are not sufficiently large enough to constitute a sampling error.

IV. ADMINISTRATION OF THE TEST

The Strong Vocational Interest Blank was administered to all 96 of the subjects by the investigator. The number of subjects in the testing sessions conducted at the Preston School of Industry varied from a maximum of 13 to a minimum of 3. The sessions were held in a classroom in the Educational Building at the Preston School.

The investigator informed the wards of the nature and purpose of the meeting; and that he was working under the direction of the staff psychologist.

The technique of answering the test items was read and explained to the wards. Efforts were made during the administration of the test to answer all questions regarding the meaning of difficult items.

The presentation of the Strong Vocational Interest Blank to the non-delinquent sample followed the same general procedures, with minor variations. The number of subjects in the testing sessions varied from a maximum of 8 to a minimum of 6.

The non-delinquent testing sessions were held in a variety of locations with generally satisfactory results. Two exceptions, however, require further explanation. At Franklin Junior High School, the study hall was used for testing purposes. During one of these sessions, an interruption, of about three minutes duration, occurred when a message was broadcast over the school's intercom sound system. At the same location, during another session, the entry of a group of students unannounced caused a distraction of about five minutes duration.

Some measure of control over the non-delinquent student's test-taking motivation was established by the investigator's announcement that the scores would be given to the student's counselors at a later date.

V. SCORING OF THE TESTS

A preliminary review of the item responses for each group was made. The number of scorable errors on the Occupational Level scale was tabulated. This information will be reported in a later portion of this paper. The protocols were hand-scored using a prepared scoring key. Standard scores

were obtained by rounding the raw score data[6] to the nearest multiple of 10. Those raw scores that fell at the exact midpoint of the class interval were rounded at random to control statistical bias.

VI. SUMMARY

The experimental design and the selection of subjects for the investigation were described. The groups were compared in regard to the following variables: age, education, intelligence, reading level, racial group, and fathers' occupational level. The groups were found to be comparable in regard to age and education, and very similar in regard to intelligence; although a greater number of cases at the extremes of the distribution was noted in the non-delinquent sample. An estimate of the level of reading difficulty of the Strong Blank was given and the limitations of the reading score data given in Table IV were explained. The delinquent sample was found to be superior to the non-delinquent sample in regard to level of reading ability. The likelihood of this difference in reading ability influencing to a significant degree the results of the tests is very small; since the subjects were given ample time to read and answer all the items on the Strong Vocational Interest Blank. The groups were found to be

---

[6] Consult Appendix II for the raw score data.

comparable in regard to the ratio of Caucasian students to students of minority group background. The groups were found to be comparable in terms of the occupational status levels of the male parents of the subjects; although certain minor group differences were noted and discussed.

The procedures followed in administering the tests to the two samples were described. Two interruptions during the non-delinquent testing sessions were noted; and the technical procedures followed in scoring the tests were described in closing.

CHAPTER IV

ANALYSIS OF THE DATA

The purpose of this chapter is to present the sampling data gathered, and to describe the techniques employed in determining the significance of the findings.

I. TEST ERRATA

In Table VII the data concerning the number and types of scorable errors on the Occupational Level Scale, made in response to test items on the Strong Vocational Interest Blank, are given for each group. The delinquent sample made slightly more than twice the number of scorable errors made by the non-delinquent sample. For both groups, the number of scorable errors on the Occupational Level scale was well under 1 per cent of the total number of possible responses.

The most common error made in both groups was omissions. Delinquents made approximately seven to eight times more errors in the two remaining categories, double answers and misplaced answers, than did the non-delinquents.

II. GRAPHIC PRESENTATION

Figure 1 is a frequency polygon illustrating the distribution of standard scores on the Occupational Level scale

TABLE VII

TEST ERRATA OF ITEM RESPONSES OF THE TWO SAMPLES AS SCORED ON THE OCCUPATIONAL LEVEL SCALE

YOUTH AUTHORITY WARDS N=48			
Part	Omissions	Double Answers	Misplaced Answers
I	17	0	0
II	1	0	0
IV	15	1	0
VI	1	14	38
VII	17	10	0
VIII	14	1	0
Total	65	26	38
Number of Possible Responses			19,200
Number of Scorable Errors			129

NON-DELINQUENT STUDENTS N=48			
Part	Omissions	Double Answers	Misplaced Answers
I	25	2	0
II	1	0	0
IV	8	1	0
VI	4	0	5
VII	2	0	0
VIII	6	2	0
Total	46	5	5
Number of Possible Responses			19,200
Number of Scorable Errors			56

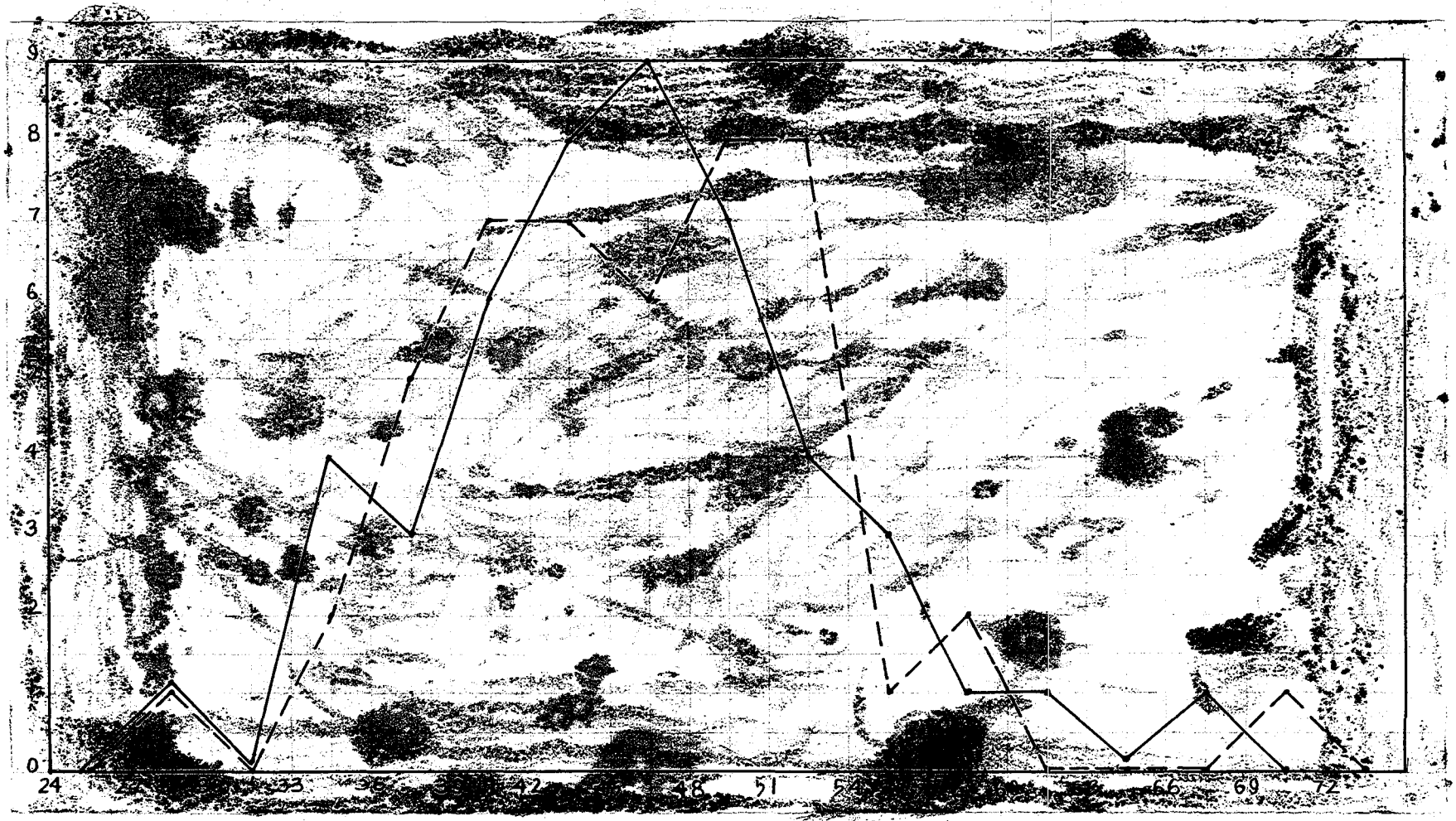

FIGURE 1

FREQUENCY POLYGON OF STANDARD SCORES ON THE OCCUPATIONAL LEVEL SCALE FOR THE TWO SAMPLES YOUTH AUTHORITY WARDS--NON-DELINQUENT STUDENTS—

for the two samples. The scores of the non-delinquent sample are more symmetrically distributed around the mid-point of the curve; than are the scores of the delinquent sample.

The most noticeable difference, between the curves representing the distribution of standard scores in the two samples, is a bi-modal clustering of cases in the intervals 40.5-43.5, and 49.5-52.5, in the Youth Authority sample.

III. SIGNIFICANCE OF THE DIFFERENCE BETWEEN MEANS

In the distribution of standard scores the mean number was 45.6 for the delinquent sample with a standard deviation of 7.4 and a range of 43. For the non-delinquent sample the mean number was 45.3 with a standard deviation of 7.4 and a range of 39.

Group	Mean	SD	Range
Delinquent	45.6	7.4	43
Non-delinquent	45.3	7.4	39

Upon inspection the difference between means appeared to be not significant. As a test of this the data were compared for differences between means using the formulas

$s_{\bar{D}} = \sqrt{s_{\bar{X}}^2 \quad s_{\bar{Y}}^2}$ and $t = s_{\bar{D}}^{D}$ as given by Lacey.[1]

Difference between means = +.3

$t = .19$ $P > .10$ for 94 degrees of freedom

---

[1]Oliver L. Lacey, Statistical Methods in Experimentation (New York: The Macmillan Co., 1953), p. 113.

This treatment yielded a "t" of .19 which was not significant for the number of degrees of freedom present in the cases. The question as to whether the observed difference between the means of the two samples could have resulted from the operation of chance factors was answered in the affirmative.

IV. ANALYSIS OF VARIANCE

As a further test of significance the sampling data were analyzed for between set, and within set variance. Table VIII gives the deviations of means for the delinquent and non-delinquent samples from the grand mean of the two groups combined.

Table IX gives the data for the F ratio.

$$F = .041$$

$P > .05$ for 1 and 94 degrees of freedom.

This F ratio was also not significant for the number of degrees of freedom present in the sets and the cases. The question as to whether the observed variance of scores between the two samples, and within each of the samples, could have resulted from the operation of chance factors was answered in the affirmative.

The statistical techniques employed in the analysis of the sampling data justify the acceptance of the null hypothesis.

TABLE VIII

DEVIATIONS OF SET MEANS FROM GRAND MEAN (d)

Youth Authority Wards		Non-Delinquent Students	
d	+.11	-.19	
d^2	.0121	.0361	Ed^2 .0482
nd^2	.5808	1.7328	nEd^2 2.3136

TABLE IX

THE TOTAL VARIANCE IN THE OCCUPATIONAL LEVEL DATA SUBDIVIDED INTO TWO COMPONENTS

Components	Sum of Squares	Degrees of Freedom	Variance
Between sets	2.3136	1	2.3136
Within sets	5205.80	94	55.38
Total	5208.1136	95	

$$F = \frac{2.314}{55.38} = .041$$

V. SUMMARY

The techniques and classifications employed in the analysis of the sampling data were presented. The number and types of scorable errors made by both groups in response to test items on the Strong Vocational Interest Blank were given. For both groups the number of scorable errors on the Occupational Level scale was well under 1 per cent of the total number of possible responses. The most common error made in both groups was omissions. Delinquents made approximately seven to eight times more errors in the two remaining categories, double answers and misplaced answers, than did the non-delinquents. The distributions of standard scores for the two groups yielded a t-score of .19; not significant for the number of degrees of freedom present in the cases. A test of the significance of the between set, and within set variance of scores was then made. This yielded an F ratio of .041; not significant for the number of degrees of freedom present in the sets and the cases. The null hypothesis was accepted.

CHAPTER V

INTERPRETATION OF THE FINDINGS

This chapter is concerned with a qualitative interpretation of the data presented in Chapter IV. Two methods of comparison are utilized: first, the delinquent and non-delinquent Occupational Level Scores are interpreted in regard to the norms derived from the Occupational Level scale, and second, the delinquent and non-delinquent Occupational Level scores are interpreted in regard to the achieved occupational status of the male parents.

I. INTERPRETATION OF THE DATA IN REGARD TO OCCUPATIONAL LEVEL NORMS

Table X summarizes the percentage of cases in the delinquent and non-delinquent groups that fall within the mean standard score levels reported by Strong[1] for the occupations tabulated.

The distributions of Occupational Level scores for the two groups are comparable in terms of their corresponding occupational norms.

---

[1]Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford University, California: Stanford University Press, 1943), Table 50, p. 192.

TABLE X

MEAN SCORES OF OCCUPATIONS ON THE OCCUPATIONAL LEVEL SCALE COMPARED WITH THE PERCENTAGE OF CASES FALLING WITHIN THE INTERVAL IN THE TWO SAMPLES

OCCUPATION	Standard Score	Sigma	PERCENTAGE OF CASES FALLING WITHIN THE INTERVAL	
			Youth Authority Ward	Non-Delinquent Students
Lawyer.	64.4	6.9	2.08	4.16
Office Worker. .	57.0	7.5	29.16	25.00
Carpenter. . . .	48.5	8.0	45.08	52.08
Unskilled. . . .	44.4	8.7	22.91	18.00
Total			99.23	99.24

A slight tendency towards a bi-modal clustering of cases at the Office Worker and Unskilled levels is apparent in the delinquent sample.

II. INTERPRETATION OF THE DATA IN REGARD TO FATHERS' OCCUPATIONAL STATUS

Previous studies investigating the role of social stratification in the formulation of the occupational choices of youth have yielded significant results. Youmans,[2] examining the occupational expectations of twelfth-grade boys reports: "A very substantial and statistically significant association exists between social stratification and the occupational expectations of the boys using the fathers' occupational levels as an index."

Empey[3] reports confirmatory evidence in his investigation of upper, middle, and lower-class youth: "Their aspirations were perhaps the result of conditioning on particular socio-economic levels."

Although the present investigation is concerned with the comparison of delinquent and non-delinquent samples in

---

[2]E. Grant Youmans, "Occupational Expectations of Twelfth Grade Michigan Boys," The Journal of Experimental Education, 24:259, June, 1956.

[3]La Mar T. Empey, "Social Class and Occupational Aspiration: A Comparison of Absolute and Relative Measurement," American Sociological Review, 21:703, December, 1956.

regard to level of occupational interests, the interpretation of the sampling data in regard to the achieved occupational status of the male parents provides an additional check on the presence or absence of qualitative differences between the groups, as measured by the Occupational Level scale.

Table XI[4] shows the relationship between the expressed levels of occupational interest, and the achieved occupational status of the male parents for both groups.

The levels of occupational interests represented in the delinquent sample parallel those represented in the non-delinquent sample. The non-delinquents' levels of occupational interests are in closer agreement with their fathers' achieved occupational status, than are those of the delinquents.

The delinquents' levels of occupational interests do not accord as well as do the non-delinquents' with their fathers' achieved occupational status. Fewer cases are represented at the professional and business levels, while a bimodal clustering of cases is apparent at the skilled and unskilled labor levels. These differences suggest a hypothesis for further research which will be offered in the final chapter of this paper.

---

[4]Based on data given in Table 49, Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford University, California: Stanford University Press, 1943), p. 190.

TABLE XI

FATHERS' OCCUPATIONAL LEVEL COMPARED WITH THE DISTRIBUTION OF OCCUPATIONAL LEVEL SCORES IN THE TWO SAMPLES

Fathers' Occupational Level	Occupational Level Scores Youth Authority Wards				Fathers' Occupational Level	Occupational Level Scores Non-Delinquents			
	f	%	f	%		f	%	f	%
Professional	2	4.17	1	2.08	Professional	0	0.00	2	4.17
Business Managerial Semi-Managerial	8	16.67	2	4.17	Business Managerial Semi-Managerial	4	8.33	2	4.17
Clerical	1	2.08	1	2.08	Clerical	0	0.00	2	4.17
Skilled Labor	4	8.33	16	33.30	Skilled Labor	6	12.50	11	22.90
Semi-skilled Labor	12	25.00	6	12.50	Semi-skilled Labor	10	20.83	9	18.75
Unskilled Labor	10	20.83	20	41.60	Unskilled Labor	16	33.34	19	39.50
Not Represented	11	22.90	2	4.17	Not Represented	12	25.00	3	6.25
TOTAL	48	99.98	48	99.90	TOTAL	48	100.00	40	99.91

III. SUMMARY

A qualitative interpretation of the data was made using two methods of comparison: First, the Occupational Level scores of the delinquent and non-delinquent samples were interpreted in regard to the norms derived from the Occupational Level scale; and second, the Occupational Level scores of the delinquent and non-delinquent samples were interpreted in regard to the achieved occupational status of the male parents.

The distributions of Occupational Level scores for the two groups were found to be comparable in terms of their corresponding occupational norms.

The relationship between the subjects' expressed levels of occupational interests and the achieved occupational status of the male parents was then examined.

The non-delinquents' levels of occupational interests were found to be in closer agreement with their fathers' achieved occupational status, than were those of the delinquents.

Differences between the delinquents' levels of occupational interests and their fathers' achieved occupational status were discovered: fewer cases were represented at the professional and business levels; while a tendency for a bimodal clustering of cases is apparent at the skilled and

unskilled labor levels.

A hypothesis dealing with these findings will be offered in the final chapter of this paper.

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this final chapter is to summarize the analysis of the data and to report the findings and the inferences based on these findings, as well as to make recommendations for further research.

I. SUMMARY AND CONCLUSIONS

Summary. The purpose of this study was to determine what differences, measurable by the Occupational Level scale of the Strong Vocational Interest Blank For Men, exist between comparable groups of delinquent and non-delinquent male adolescents.

The null hypothesis to be tested was that no difference, other than differences attributable to chance, exists between the scores made on the Occupational Level scale of the Strong Vocational Interest Blank For Men by a group of California Youth Authority Wards, and the scores made by a comparable group of non-delinquent junior high school and college students.

Two methods of statistical analysis were utilized, leading to the conclusion that no significant quantitative differences were observable between the scores made by the

groups. A qualitative interpretation of the data in terms of the norms derived from the Occupational Level scale was then given. The distributions of Occupational Level scores for the two groups were found to be comparable in terms of their corresponding occupational norms; although a tendency towards a bi-modal clustering of cases at the Office Worker and Unskilled levels was noticed in the delinquent sample. The relationship between the expressed levels of occupational interest of the subjects, and the achieved occupational status of the male parents was then investigated. The non-delinquents' levels of occupational interest were found to be in closer agreement with their fathers' achieved occupational status, than were those of the delinquents. Differences between the delinquents' levels of occupational interest and their fathers' achieved occupational status were discovered; fewer cases at the professional and business level were found; while a tendency for a bi-modal clustering of cases at the skilled and unskilled labor levels was in evidence.

Conclusions. The control of the group variables, in this investigation has resulted in a biased test of the null hypothesis.

Two inferences may be drawn from the findings of this study:

1. The controlled variables, sex, age, education, intelligence, reading level,

racial group, and fathers' occupational level acted as more influential determinants upon the Occupational Level scores attained by the groups; than did the independent variable, delinquency.

or

2. Dissimilar patterns of social behavior do not lead to measurable differences in the expressed levels of occupational interests between comparable groups of male adolescents in the age range surveyed.

II. RECOMMENDATIONS FOR FURTHER RESEARCH

An interesting by-product of the present investigation was the discovery of the differences between the delinquents' levels of occupational interest and their fathers' achieved occupational status. In the distribution of Occupational Level scores obtained from the delinquent sample, fewer cases at the professional and business level were found, while a tendency for a bi-modal clustering of cases at the skilled and unskilled labor levels was in evidence. Possibly these deviations were the result of chance factors. An alternative hypothesis, however, should not be dismissed without further experimental evidence: the observable qualitative differences in the delinquents' levels of occupational interests as compared with their fathers' achieved occupational status were the result of the faking of a certain number of responses to test items. Socially manipulative delinquents tended to fake

their responses upward on the Occupational Level scale; while socially hostile delinquents tended to do the opposite. A test of this hypothesis would further delimit the significance of the present findings.

In addition, a series of related studies should be undertaken to determine whether positive correlations exist between the variables controlled in the present investigation, and scores obtained on the Occupational Level scale for a representative group of male adolescents in the age range surveyed. If a significant relationship between the variables controlled in the present investigation and scores on the Occupational Level scale is proven; the use of the Occupational Scale in the present research context is unwarranted.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. PRIMARY SOURCES

1. Books

Guilford, James P. Fundamental Statistics In Psychology and Education. New York: McGraw-Hill, 1950.

Darley, John G., and Theda Hagenah. Vocational Interest Measurement. Minneapolis: The University of Minnesota Press, 1955.

Lacey, Oliver L. Statistical Methods in Experimentation. New York: The Macmillan Company, 1953.

Strong, Edward K., Jr. Vocational Interests of Men and Women. Stanford University, California: Stanford University Press, 1943.

_____. Vocational Interests 18 Years After College. Minneapolis: The University of Minnesota Press, 1955.

Yoakum, Gerald A. Basal Reading Instruction. New York: McGraw-Hill, 1955.

2. Periodical Articles

Barnett, Gordon J., et. al. "The Occupational Level Scale as a Measure of Drive," Psychological Monographs, 66:10, 1952.

Barnett, Gordon J. "Level of Occupational Interests and Satisfaction with Chronic Vagrancy," Psychological Monographs, 66:4, Chapter II, 1952.

Berdie, Ralph F. "Prediction of College Satisfaction and Achievement," Journal of Applied Psychology, 28:239, 1944.

Carter, Harold D. "The Development of Vocational Attitudes," Journal of Consulting Psychology, 4:190, 1940.

Corsini, Raymond J. "Vocational Interests of Juvenile Delinquents," Journal of Correctional Education, 3:11-16, 1951.

Doll, O., et al. "Delinquent Adolescents and their Vocations: A Study of Convicted Adolescents in Munich During 1937," Kriminalistik Abtheilung, 42:195 pp., 1939.

Empey, La Mar T. "Social Class and Occupational Aspiration: A Comparison of Absolute and Relative Measurement," American Sociological Review, 21:703, December, 1956.

Fornwalt, Russell J. "Vocational Guidance for the Delinquent Boy," Occupations, 25:149, 1946.

Green, B. R. and D. Russell Davis. "The Employment History of Approved School Boys," British Journal of Delinquency, 2:303, 1952.

Gustad, John D. "Academic Achievement and Strong Occupational Level Scores," Journal of Applied Psychology, 36:75, April, 1952.

Handelsman, Irving. "The Relationship Between Occupational Level Scores and Various Measures of Aspiration and Achievement," Psychological Monographs, 66:10, Chapter III, 1952.

Holmes, Jack A. "Occupational Aptitudes of Delinquents," Journal of Genetic Psychology, 78:47, 1951.

Johnson, Ralph H., and Guy L. Bond. "Reading Ease of Commonly Used Tests," Journal of Applied Psychology, 34:319, October, 1950.

Kendall, William E. "The Occupational Level Scale of the Strong Vocational Interest Blank For Men," Journal of Applied Psychology, 31:283, 1947.

Luce, Norman D. "Let's Have Some Job-Getting Training," California Youth Authority Quarterly, 11:19, Summer, 1958.

Ostrom, Stanley R. "The Occupational Level Key of the Strong Vocational Interest Blank and Scholastic Success at College Freshmen Level," Journal of Applied Psychology, 33:51, February, 1949.

_____. "The Occupational Level Key of the Strong Test and Drive at the Twelfth Grade Level," Journal of Applied Psychology, 33:240, June, 1949.

Stefflre, Buford. "The Reading Difficulty of Interest Inventories," Occupations, 26:95, 1947.

Stewart, Lawrence H. "The Relationship of Certain Social Factors to Occupational Level as Measured by Strong's Vocational Interest Blank," Psychological Monographs, 66:18, Chapter IV, 1952.

Super, Donald E. "The Meaning of Occupational Level as Measured by Strong's Blank," Psychological Monographs, 66:22, Chapter V, 1952.

Waldheim, O. S. "The Causes of Vocational Instability of Dissocial Youths," Zentralblatt für Psychotherapie, 12:256, 1940.

Youmans, E. Grant. "Occupational Expectations of Twelfth Grade Michigan Boys," The Journal of Experimental Education, 24:259, June, 1956.

3. Pamphlets

Darley, John G. Clinical Aspects and Interpretation of the Strong Vocational Interest Blank New York: The Psychological Corporation, 1941.

Division of Occupational Analysis. Dictionary of Occupational Titles Part IV: Entry Occupational Classifications United States Government Printing Office, October, 1944.

Rodger, A. "A Borstal Experiment in Vocational Guidance," Report of the Industrial Health Board, London, 78:50 pp., 1937.

4. Unpublished Material

Berdie, Ralph F. "Validity of the Strong Vocational Interest Blank." Paper read at the Proceedings of the Conference on Interest Measurement, University of Minnesota, 1955.

Hoyt, Donald P. "Measurement and Prediction of the Permanence of Interests." Paper read at the Proceedings of the Conference on Interest Measurement, University of Minnesota, 1955.

Stordahl, Kenneth E. "The Stability of Strong Vocational Interest Blank Patterns for Pre-College Males." Unpublished Doctoral dissertation, The University of Minnesota, 1953.

APPENDIX

APPENDIX I

TABLE XII

SPECIFIC OFFENSES COMMITTED BY THE YOUTH AUTHORITY WARDS

SUBJECT	NUMBER OF PREVIOUS OFFENSES	SPECIFIC CONVICTIONS
1	3 or more	4 Armed Robberies Manslaughter
2	3 or more	2 Robberies Murder
3	3 or more	Grand Theft Assault, Burglary
4	2	Burglary
5	3 or more	Car Prowling Malicious Mischief Carrying a Concealed Weapon
6	2	Shoplifting Concealed Weapons
7	3 or more	3 Burglaries 1 Petty Theft
8	3 or more	2 Grand Theft Auto 3 Burglaries 3 Petty Thefts
9	3 or more	Burglary Malicious Mischief Petty Theft
10	3 or more	Burglaries Petty Theft
11	3 or more	Malicious Mischief Receiving Stolen Property Petty Theft

TABLE XII (continued)

SUBJECT	NUMBER OF PREVIOUS OFFENSES	SPECIFIC CONVICTIONS
12	3 or more	Armed Robbery Gang Fight and Shooting
13	2	Burglary Tampering with an Auto
14	2	Burglary Grand Theft Auto
15	3 or more	3 Burglaries 1 Petty Theft
16	2	2 Grand Theft Auto
17	2	Assault with a Deadly Weapon Forgery
18	3 or more	6 Burglaries 2 Runaway
19	3 or more	3 Malicious Mischief Burglary
20	3 or more	Grand Theft Auto Forgery Theft
21	3 or more	3 Grand Theft Auto Child Molesting
22	2	Manslaughter First Degree Robbery
23	3 or more	Armed Robbery Grand Theft Auto Burglary
24	3 or more	Grand Theft Auto Burglaries

TABLE XII (continued)

SUBJECT	NUMBER OF PREVIOUS OFFENSES	SPECIFIC CONVICTIONS
25	3 or more	Grand Theft Auto 2 Burglaries Petty Theft
26	2	Armed Robbery
27	3 or more	Robbery Assault and Battery Malicious Mischief
28	2	Grand Theft Auto
29	2	Grand Theft Auto Burglary
30	3 or more	Grand Theft Auto Burglary Petty Theft
31	3 or more	Burglaries Theft Forgery
32	2	Grand Theft Auto
33	2	Grand Theft Auto 2 Assault with a Deadly Weapon
34	3 or more	Incorrigibility Malicious Mischief Theft
35	3 or more	2 Grand Theft Auto Burglary Statutory Rape
36	3 or more	2 Grand Theft Auto Forgery 2 Petty Theft

TABLE XII (continued)

SUBJECT	NUMBER OF PREVIOUS OFFENSES	SPECIFIC CONVICTIONS
37	3 or more	2 Grand Theft Auto 1 Armed Robbery 1 Attempted Robbery
38	3 or more	Not Given
39	3 or more	3 Grand Theft Auto Malicious Mischief Car Clouts
40	3 or more	8 Grand Theft Auto Theft Burglaries
41	2	Attempted Robbery Possession of Stolen Firearms
42	3 or more	4 Grand Theft Auto
43	2	Grand Theft Auto Burglary
44	2	Grand Theft Auto Attempted Robbery
45	2	Grand Theft Auto Repeated Traffic Violations
46	3 or more	3 Burglaries Mail Theft
47	2	Not Given
48	3 or more	13 Burglaries 2 Malicious Mischief

APPENDIX II

TABLE XIII

RAW SCORE DATA FOR THE TWO SAMPLES
AS SCORED ON THE OCCUPATIONAL LEVEL SCALE

YOUTH AUTHORITY WARDS N=48				NON-DELINQUENT STUDENTS N=48			
Subject	Positive	Negative	Raw Score	Subject	Positive	Negative	Raw Score
1	66	207	-141	1	105	183	- 78
2	81	195	-114	2	136	150	- 14
3	95	184	- 89	3	184	121	63
4	89	174	- 85	4	156	136	20
5	120	200	- 80	5	207	111	96
6	97	168	38	6	114	168	- 54
7	108	174	- 66	7	97	190	- 93
8	107	179	- 72	8	145	158	- 13
9	114	169	- 55	9	94	180	- 86
10	126	182	- 56	10	171	137	34
11	117	173	- 56	11	140	141	- 1
12	120	167	- 47	12	117	171	- 54
13	113	167	- 54	13	114	168	- 54
14	134	182	- 48	14	112	159	- 47
15	120	174	- 54	15	129	156	- 27
16	129	168	- 39	16	159	143	16
17	123	157	- 34	17	166	158	8

TABLE XIII (continued)

YOUTH AUTHORITY WARDS N=48				NON-DELINQUENT STUDENTS N=48			
Subject	Positive	Negative	Raw Score	Subject	Positive	Negative	Raw Score
18	133	163	- 30	18	155	140	15
19	138	171	- 33	19	192	124	68
20	130	158	- 28	20	109	171	- 62
21	121	155	- 34	21	74	213	-139
22	127	159	- 32	22	132	178	- 46
23	137	160	- 23	23	122	162	- 40
24	140	163	- 23	24	98	180	- 82
25	137	158	- 21	25	150	164	- 14
26	132	150	- 18	26	140	157	- 17
27	137	147	- 10	27	131	152	- 21
28	149	162	- 13	28	113	151	- 38
29	158	157	1	29	170	123	47
30	148	137	11	30	138	168	- 30
31	156	142	14	31	143	156	- 13
32	162	153	9	32	145	145	0
33	149	139	10	33	178	131	47
34	150	135	15	34	92	191	- 99
35	144	122	22	35	155	165	- 10
36	158	135	23	36	127	167	- 40
37	162	135	27	37	165	133	32

TABLE XIII (continued)

YOUTH AUTHORITY WARDS N=48				NON-DELINQUENT STUDENTS N=48			
Subject	Positive	Negative	Raw Score	Subject	Positive	Negative	Raw Score
38	158	130	28	38	147	160	- 13
39	153	125	28	39	152	128	24
40	151	125	26	40	134	153	- 19
41	173	130	43	41	125	169	- 44
42	172	135	37	42	131	157	- 26
43	172	128	44	43	98	169	- 71
44	183	138	45	44	120	160	- 40
45	168	116	52	45	180	137	43
46	187	120	67	46	81	192	-111
47	190	121	69	47	234	95	139
48	239	70	169	48	179	139	40