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A STUDY OF THE COMPARISON OF INTERESTS OF SOCIAL SCIENCE
MAJORS WITH THE INTERESTS OF OTHER ADULTS AS MEASURED
BY THE KUDER PREFERENCE RECORD

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

By

James E. Comer, Jr.

KANSAS STATE TEACHERS COLLEGE
Pittsburg, Kansas
June, 1949

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ABSTRACT

This study was undertaken to compare the interests of social science majors with the interests of other adults based on data gathered from a survey of male students of Kansas State Teachers College, Pittsburg, Kansas. A differentiation between preferences of social science majors and those of the general population was made using Fisher's discriminant function.

A group of 121 social science majors were tested by means of a special mailing form (Form C) of the Kuder Preference Record. Sixty-two valid returns were used in this study.

The mean raw scores of the Social Science Majors tended to show a pattern of interest with the highest centile ranks being obtained in the literary, social service, and musical areas. The lowest centile ratings were in mechanical, computational, and scientific areas.

The scores of Social Science Majors tended to closely resemble the High School Teachers of Social Studies.

Fisher's discriminant function was used to obtain relative weights which could be applied to raw scores to produce a criterion regressed score.

Within the Social Science group there were two somewhat different patterns. One group was the majors who expressed satisfaction with the present occupation; the other group preferred "a different kind of work entirely."

The mean raw scores of the "Like" group tended to be higher in the areas of social service, literary, scientific, persuasive, and artistic activities; while the "Different" group obtained higher scores in the fields of computational, musical, and clerical activities. It was found that the "Like" group most closely resembled the High School Teachers of Social Studies.

When their scores were weighted, seventy-six per cent of the "Like" group were above the fiftieth centile as compared to fifty-three per cent of the "Different" group. Forty-seven per cent of the "Different" group had scores below the fiftieth centile--almost double the twenty-four per cent of the "Like" group.

On the basis of the weighted scores of Social Science Majors, it would seem that a differentiation is possible. Weighted scores discriminate consistently enough at higher levels of centile rank to permit a distinction between those who are satisfied in a pattern of social science interests and those who do not profess interests in this field of endeavor.

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CHAPTER I

INTRODUCTION

Needs for the Study

It is acknowledged today that success in occupations, education, and in cultural areas, is dependent to a considerable extent on interest. In the past decade there has been an increasing tendency to use interest and aptitude testing to secure individuals who are better adapted to a particular vocation. Such tests are of the standardized type and bear coefficients of validity and reliability of sufficient significance to provide a good indication of the area in which an individual's interests lie. One of the most promising of these tests is the Kuder Preference Record. Increasing the usefulness of the Kuder Preference Record is one of the major goals of psychological research in this field.

Purpose of the Study

It is the purpose of this study to compare the interests of social science majors with the interests of ^{other} normal adults based on the data gathered from a survey of sixty-two male students of Kansas State Teachers College who are majoring in social science. A differentiation between preferences of social science majors and those of the general population will

be made using Fisher's discriminant function equation. This will permit better selection of students whose interests are similar to those of social science majors.

Justification of the Study

Berkshire, et al.,¹ made a survey of 310 guidance centers to determine test preferences. They found that the Kuder Preference Record (hereafter designated as the Preference Record) ranked highest in frequency of mention, leading all types of tests. This can be explained best by the fact that the Preference Record is comparatively easy to administer and can be scored in ten to fifteen minutes. This ease of scoring creates a demand by test users for further standardization of interest patterns for the various occupational areas. The data and information obtained in this study should be of value in further standardization of the Preference Record.

Method of Study

The method used in this study was the normative survey. A group of 121 social science majors of Kansas State Teachers College of Pittsburg, Kansas, were tested by means of a special mailing form of the Preference Record. There were eighty returns, eight of which had to be rejected because of a low verification score.

¹J. R. Berkshire, J. F. T. Bugental, F. P. Cassens, and H. A. Edgerton, "Test Preferences in Guidance Centers," Occupations, XXVI (March, 1948), 339.

Data obtained were analyzed by use of Fisher's discriminant function, a technique used in previous studies of this type.

Description of the Test

The form used in this study was Form C, the 1948 revision of the Preference Record. (Special mailing form--see Appendix A). Form C presents another scale called outdoor activities in addition to the nine areas (described below) included in Form BB. The new scale is designed to measure naturalistic and agricultural preferences.² The supplementary instructions for Form C can be found in Appendix B. Another new score has been added which is intended to help identify the subjects whose Preference Record may be invalid due to the following reasons: (1) he may have failed to follow directions exactly, (2) he may have failed to mark the items which almost all persons mark, (3) he may have omitted some groups, and (4) he may actually deviate from the normal in respect to his preferences.³ It was this score which necessitated the exclusion of the eight returns not used.

The ten occupational scales included in Form C are: outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical.

²G. Frederic Kuder, Supplementary Instructions for the Kuder Preference Record, Vocational Form C (Chicago: Science Research Associates, 1948), p. 1.

³Ibid.

Form C consists of 176 groups of triads as compared to the 168 groups of Form BB. There has been regrouping of the old Form BB triads in addition to the new groups. In the new form, as in Form BB, the subject indicates the activity he most likes of the three items and the activity he likes least.

The test is administered without time limit. College students usually require about thirty to forty minutes to complete the test; while high school students require a slightly longer period. Scoring of the test requires from ten to fifteen minutes. The raw scores of the subject are plotted on a profile chart which gives an indication of the high and low points of preference with respect to the ten fields measured. A copy of the profile chart can be found in Appendix C.

Reliability: Carter has summed up the belief of most authorities in the field of psychometrics in this statement: "There is evidence in the published literature that the Kuder Preference Record is highly reliable."⁴ Kuder⁵ has presented evidence in his manual which would tend to show a fairly high reliability. The mean reliability for all

⁴Harold D. Carter, Vocational Interests and Job Orientation, A Ten-Year Review (Applied Psychology Monographs, No. 2. Stanford University, California: Stanford University Press, 1944), p. 15.

⁵G. Frederic Kuder, Revised Manual for the Kuder Preference Record (Chicago: Science Research Associates, 1946), p. 19.

groups were as follows: (1) mechanical, .922; (2) computational, .891; (3) scientific, .908; (4) persuasive, .875; (5) artistic, .921; (6) literary, .903; (7) musical, .917; (8) social service, .913; and (9) clerical, .903. Although there is no reliability quoted for outdoor activities, there is no reason to believe that the reliability of the other scales would decrease as the result of adding a new scale. Contrarily, when the two occupational scales, mechanical and clerical, were added to Form A to create Form B, there was an increase in the reliability of the seven scales. There is, then, reason to believe the same result would follow when the next scale was added.

Validity: Lack of evidence verifying reliability and validity other than that offered by Kuder has been the chief criticism of the original form and the 1942 revision. A. B. Crawford and A. E. Traxler, in their reviews of the 1939 edition of the Preference Record for the Rutgers University publication, The Nineteen Forty Mental Measurements Yearbook,⁶ have questioned the validity of the test. Since that time, however, there have been additional studies made which have increased the number of persons on which to base the validity. Super⁷ states in his review: "Data have been accumulated which now give one some basis for interpreting

⁶Oscar K. Buros, Editor, The Nineteen Forty Mental Measurements Yearbook (Highland Park, New Jersey: Rutgers University Press, 1941), 40:1671.

⁷D. E. Super, "The Kuder Preference Record in Vocational Diagnosis," Journal of Consulting Psychology, XI (July-August, 1947), 184-193.

Kuder scores in vocational guidance. ... the evidence justifies the conclusion that the Kuder Preference Record has now been sufficiently well standardized and validated for use in vocational guidance."

Description of the Discriminant Function

Many problems confront the educational and psychological research workers, such as: To what extent do intelligence, interests, scholastic achievement, and others, contribute to leadership? Answers to this type of question are obtained by use of multiple regression equations. The critical problem is the finding of the relative degrees of importance with which isolated components enter into the determination of the criterion score.

The greatest task has been to find the most economical method of solving the equations. Various persons have devised methods for reducing the labor involved in solving sets of simultaneous equations. As early as 1855 Gauss⁸ developed a method of shortening the process by successive trials and approximations. Kelley⁹ developed an indirect method for attacking the problem of regression coefficients which he called first the approximation method and later, in a more developed form, the iteration method. Doolittle¹⁰ devised a

⁸ Charles C. Peters and Walter R. Van Voorhis, Statistical Procedures and Their Mathematical Bases (New York: McGraw-Hill Book Company, 1940), p. 225.

⁹ Ibid.

¹⁰ Ibid.

very simple method which required a work sheet and a minimum knowledge of mathematics.

The Fisher discriminant function, used here, involves the use of similar methods of solution in problems of differentiation between a set of factors and a criterion. It has been employed with success in past studies of a similar nature. It gives regression coefficients which may be used for weighting raw scores and the multiple correlation when those weights are used.

CHAPTER II

REVIEW OF RELATED LITERATURE

Reliability

In 1937 Kuder and Richardson¹ computed the reliabilities of the seven scales of Form A using a special formula described by them in "The Theory of the Estimation of Test Reliability." The reliabilities ranged from .84 to .90 for a group of eighty-four college students. The inter-correlations of the results obtained by use of one of the experimental forms with 100 high school students were all less than .30.

Kuder,² in his manual, reports additional reliabilities from data furnished by other studies. The reliabilities are shown in Table I. (The abbreviations used in Tables and Figures of this study are those used by Kuder in his manual.) For example, a group of forty-one graduate students, male and female, were studied by Traxler. The results obtained for reliability were: (1) mechanical, .97; (2) computational, .98; (3) scientific, .95; (4) persuasive, .97; (5) artistic, .96; (6) literary, .95; (7) musical, .95; (8) social service, .93; and (9) clerical, .98. The average reliabilities are in agreement with those found by Kuder and Richardson. The median of the entire table is .91.

¹G. Frederic Kuder and M. W. Richardson, "The Theory of the Estimation of Test Reliability," Psychometrika, II (November, 1937), 151-160.

²G. Frederic Kuder, Revised Manual, p. 19.

TABLE I

RELIABILITIES OF PREFERENCE RECORD SCALES

Group	No. of Cases	Sex	MEC	COM	SCI	PER	ART	LIT	MUS	SOC	CLE	Data by
Graduate Students	41	M & F	.97	.98	.95	.97	.96	.95	.95	.93	.98	Traxler
College Students	166	M	.94	.90	.93	.93	.91	.90	.90	.91	.89	Triggs
College Students	101	F	.91	.88	.88	.94	.90	.92	.85	.90	.86	Triggs
College Students	50	F	.85	.87	.91	.81	.95	.84	.96	.92	.95	Mangold
High School Seniors	125	M	.93	.90	.90	.82	.91	.91	.90	.87	.87	Hickman
High School Seniors	125	F	.89	.83	.89	.80	.92	.91	.91	.93	.90	Hickman
Eighth Grade Students	100	M & F	.96	.86	.92	.84	.92	.86	.93	.91	.89	Prosser
Men in Occupations	300	M	.95	.91	.89	.89	.90	.93	.94	.93	.88	Kuder

Validity

Investigations to discover the relationship between scores on the Preference Record and intelligence or grades of students in scholastic achievement have been made by Adkins and Kuder,³ Yum,⁴ Triggs,⁵ Kuder,⁶ Crosby,⁷ Thompson,⁸ and Harrell and Harrell.⁹ The investigations tended to result in low correlations, indicating that there is little overlapping between measures of ability and the preference measures. It was found that those with the higher intelligence ratings were slightly more able to estimate their interests.¹⁰

³D. C. Adkins and G. Frederic Kuder, "The Relation of Primary Mental Abilities to Activity Preferences," Psychometrika, V (December, 1940), 251-262.

⁴K. S. Yum, "Student Preference in Divisional Studies and Their Preferential Activities," The Journal of Psychology, XIII (April, 1942), 193-200.

⁵F. O. Triggs, "A Study of the Relation of Kuder Preference Record Scores to Various Other Measures," Educational and Psychological Measurements, III (Winter, 1943), 343-345.

⁶G. Frederic Kuder, Revised Manual, p. 18.

⁷R. C. Crosby, "Scholastic Achievement and Measured Interests," Journal of Applied Psychology, XXVII (February, 1943), 101-104.

⁸Claude E. Thompson, "Personality and Interest Factors in Dental School Success," Educational and Psychological Measurements, IV (March, 1944), 299-306.

⁹Thomas E. Harrell and Margaret Harrell, "Army General Classification Test Scores for Civilian Occupations," Educational and Psychological Measurements, V (March, 1945), 229-239.

¹⁰R. C. Crosby, loc. cit.

One of the first fields of study concerned with the Preference Record and its validity was the area of curricular differences. Investigations were made by Kuder,¹¹ the University of Chicago Board of Examinations,¹² Yum,¹³ Mangold,¹⁴ Perry and Shuttleworth,¹⁵ to discover the relation of Preference Record scores to the major fields of study. It was generally found that there was a tendency for students in different major fields to have differing patterns of preferences. Kuder's manual for the 1946 revision of the Preference Record¹⁶ includes data, collected by Barry and analyzed by Kuder, based on the scores of 1263 women which revealed: Medical students tend to make high scores on the scientific scale; physical science majors tend to be high on the same scale, and in the computational activities; business students are high on persuasive and computational scales; women preparing to be secretaries are generally high on the clerical scale; social workers tended to be high in the area of social service; others rating in their chosen major according to expectation.

¹¹G. Frederic Kuder, Revised Manual, p. 9.

¹²Board of Examinations Staff, "Report of Examinations Given by the Board of Examinations," 1939-1940 (Chicago: University of Chicago, 1941).

¹³K. S. Yum, loc. cit.

¹⁴Betty-Jane Mangold, "An Analysis of the Kuder Preference Record," (unpublished master's thesis, MacMurray College, 1945), p. 45.

¹⁵J. D. Perry and F. K. Shuttleworth, "Kuder Profiles of College Freshmen by Degree Objectives," Journal of Educational Research, XLI (January, 1948), 363-365.

¹⁶G. Frederic Kuder, Revised Manual, p. 9.

In the area of occupational differences, Lehman¹⁷ found that home economics teachers scored relatively high on the social service, artistic, and scientific scales. Hospital dieticians were high in the computational area but particularly high in the scientific and social service areas. Restaurant and tearoom managers rated high in the computational and artistic areas. Foods promotion specialists were high in the fields of scientific activities. Equipment and home service workers rated somewhat high in social service and persuasive scales. Journalists were highest in the literary and artistic fields.

Hahn and Williams¹⁸ studied Women Marine Corps Reservists. They found that: aviation assembly workers rated high in mechanical, artistic, and scientific preferences; aviation machinist mates showed high mechanical and scientific preferences; duty non-commissioned officers rated highest in persuasive and social service activities; officers, technical specialty, were high in mechanical and artistic preferences; repair workers were highest in artistic, mechanical, and scientific areas; and stenographers were high in clerical preferences.

¹⁷Ruth T. Lehman, "Interpretation of the Kuder Preference Record for College Students of Home Economics," Educational and Psychological Measurements, IV (March, 1943), 217-224.

¹⁸M. E. Hahn and C. T. Williams, "The Measured Interests of Marine Corps Women Reservists," Journal of Applied Psychology, XXIX (June, 1945), 198-211.

Triggs¹⁹ reported that nurses are significantly higher in scientific, artistic, musical, and social service preferences; low in computational, persuasive, literary, and clerical interests, when compared to women in general.

Burdette,²⁰ studying 186 industrial arts teachers, found that their interests were higher than those of the normal male population on the mechanical, artistic, literary, and social service scales; and lower on the computational, scientific, persuasive, musical, and clerical scales.

The results of studies in the area of prediction of achievement have not been successful. There have been positive and significant correlations in a few studies. In such a study, Triggs²¹ found a correlation of .42 between the scientific scale and general science achievement for women and a .32 for men; a .40 correlation for men between literary preferences and achievement in English literature as compared to a .33 for women. Mangold's²² findings of a correlation of .59 between literary interest and literature scores of the

¹⁹F. O. Triggs, "The Measured Interests of Nurses: A Second Report," Journal of Educational Research, XLII (October, 1948), 113-121.

²⁰W. E. Burdette, "Norms for the Occupation of Industrial Arts Teachers in Conjunction with the Kuder Preference Record," (unpublished master's thesis, Kansas State Teachers College, Pittsburg, Kansas, 1948).

²¹F. O. Triggs, loc. cit.

²²Betty-Jane Mangold, op. cit., p. 45.

Cooperative Contemporary Affairs Test, and a .385 correlation between scientific preferences and Cooperative Natural Science Test scores are the highest in the area of prediction of achievement.

Studies made by Peters,²³ Triggs,²⁴ Wittenborn, Triggs, and Feder,²⁵ tended to show that some relationship exists between certain areas of the Preference Record and the Strong Vocational Interest Blank, however, the correlations tended to be low and would not justify a comparison. Super²⁶ has suggested that the disagreements, instead of being a reflection on the validity of either or both, were the result of differences in methods of measurement, therefore, differences in the type of interests measured.

Discriminant Function

Detchen²⁷ used the regression formula to obtain a correlation of .78 for the correlation of actual scores obtained

²³E. F. Peters, "Vocational Interests As Measured by the Strong and Kuder Inventories," School and Society, LV (April, 1942), 453-455.

²⁴F. O. Triggs, "A Further Comparison of Interest Measurement by the Kuder Preference Record and the Strong Vocational Interest Blank for Men," Journal of Educational Research, XXXVII (March, 1944), 538-544.

²⁵J. R. Wittenborn, F. O. Triggs, and D. D. Feder, "Comparison of Interest Measurement by the Kuder Preference Record and Strong Vocational Interest Blanks for Men and Women," Educational and Psychological Measurements, III (March, 1943), 239-258.

²⁶D. E. Super, op. cit., p. 191.

²⁷Lily Detchen, "The Effect of a Measure of Interest Factors on the Prediction of Performance in a College Social Sciences Comprehension Examination," Journal of Educational Psychology, XXXVII (January, 1946), 45-52.

in the Social Sciences Comprehension Examination. She found that the grades on the examination could have been predicted exactly for forty-nine per cent of the students, and within one letter grade for another forty-four per cent.

Triggs²⁸ set up an "Occupational Index" (as yet unpublished) based on data obtained from 846 nurses. The discriminant function was used to make these comparisons: (1) All nurses with all women, (2) Public Health Nurses with Nurse Educators, (3) Nurse Educators with the composite group of nurses, (4) composite group of nurses with Public Health Nurses.

Baggaley,²⁹ using 186 Harvard freshmen, studied the relation of scores of the Preference Record to their fields of concentration. The fields of concentration were divided into two groups: Group A corresponding to the Natural Sciences, anthropology, biology, chemistry, mathematics, et cetera; and Group B, the humanities, such as, architecture, economics, English, philosophy, et cetera. A formula for the computation of Fisher's discriminant function was derived. The results of the scale weights appeared to show a basis for differentiation among Harvard freshmen and their fields of concentration. Baggaley concluded that "the higher the per cent value of the

²⁸F. O. Triggs, "A Further Comparison of Interest Measurement....," Journal of Educational Research, XXXVII (March, 1944), 538-544.

²⁹Andrew W. Baggaley, "The Relation Between Scores Obtained by Harvard Freshmen on the Kuder Preference Record and Their Fields of Concentration," Journal of Educational Psychology, XXXVIII (November, 1947), 421-427.

student's discriminant function score, the more confident is the tester in placing him in one of the two groups."

CHAPTER III

RESULTS AND INTERPRETATION

A list of the social science majors was obtained from the department of Social Science. The list was composed of 106 males and fifteen females. The special mailing form of the Preference Record was sent to all social science majors included in the list. Of the 121 forms sent, there were eighty returns, seventy males and ten females. Eight of the forms were improperly marked, which made their scores invalid. This left sixty-two males and ten females. Kuder has so constructed the norms of the Preference Record that it necessitates the division of cases according to sex. Since the number of female cases presents such a small sampling, it was thought advisable to omit them from the study.

Included in the special mailing form was information to be filled in by the individual. The standard information such as, name, age, sex, occupation, was augmented by three items designed to denote satisfaction or dissatisfaction with the present occupation. The instructions were:

"If you had your choice, which of the following would you choose, if each paid the same? (Check one.)

- ☐ The job you have now.
- ☐ The same kind of work but with some changes in the working conditions or people you work with.
- ☐ A different kind of work entirely."

Twenty-two cases chose the "job you have now," fifteen chose the second item, and twenty-one said that they wanted a different kind of work. Expressed in percentages those equalled: forty-two per cent; twenty-four per cent; and thirty-four per cent, respectively.

The mean age for the sampling of the study was 27.59 years or approximately twenty-seven years and six months. It could be assumed that the interests at this age and educational level are fairly stable. The assumption is borne out by studies made by Traxler and McCall,¹ and Woody.² It was found that interests and motivation were relatively mature by the time that an individual reached the twelfth grade. The differences between the mean scores made by pupils in Grades IX, X, and XI were slight with no consistent trend towards higher scores.

Outdoor activities have not been taken into consideration in this study due to the lack of norms in Form B with which to make a comparison. Kuder is in process of preparing a new manual which will include data on the new scale. The mean score of the area, outdoor activities, was 40.59 with a standard deviation of 14.79.

¹Arthur E. Traxler and William C. McCall, "Some Data on the Kuder Preference Record," Educational and Psychological Measurements, I (July, 1941), 253-268.

²Clifford Woody, "Guidance Implications from Measurements of Achievements, Aptitudes, and Interests," Bureau of Educational Reference and Research Bulletin, CLVI (September 1, 1944, University of Michigan School of Education, Ann Arbor, Michigan, 63.

Table II presents the mean scores and standard deviations of the Social Science Majors, Kuder's Base Group (hereafter designated Base Group), and Kuder's group High School Teachers of Social Studies (hereafter designated High School Teachers). For example, in the mechanical area, the mean

TABLE II

MEAN SCORES AND STANDARD DEVIATIONS OF K.S.T.C. SOCIAL SCIENCE MAJORS, BASE GROUP, AND HIGH SCHOOL TEACHERS

SCALE	SOCIAL SCIENCE		HIGH SCHOOL TEACHERS		BASE GROUP	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
MEC	32.08	10.32	45.50	12.32	52.67	17.07
COM	21.81	8.64	29.17	9.38	31.75	11.55
SCI	32.13	7.08	52.77	4.17	54.70	14.72
PER	44.44	14.70	67.59	18.65	61.50	16.96
ART	18.06	9.04	47.18	16.18	53.43	16.41
LIT	25.16	8.13	57.73	16.45	52.60	15.69
MUS	12.93	5.10	16.45	8.27	21.47	9.18
SOC	50.03	14.32	89.05	16.48	81.41	18.81
CLE	48.13	12.24	55.55	14.25	62.31	16.81

score of the Social Science Majors was 32.08 with a standard deviation of 10.32; the mean score of the High School Teachers group was 45.50 with a standard deviation of 12.32; the Base group had a mean score of 52.67 with a standard deviation of 17.07.

Figure 1, which can be found on page twenty-one, shows the relationship of the mean scores of Social Science Majors to both the Base Group and High School Teachers in terms of centile rank.

The highest centile ratings for Social Science Majors were obtained in literary activities, with a centile rank of seventy-five; social service, with a centile rank of seventy-four; and musical, with a centile rank of sixty-five. In the mechanical, computational, and scientific areas, the lowest centile rank was obtained, tending to approach a common level at the twenty-fifth centile level.

Two activities of the Social Science Major group, persuasive and clerical, occupy a level at a point slightly above the fiftieth and sixtieth centiles respectively. The position is one of some significance to the pattern; although the centile rank does not reach the rating of seventy-five, which is generally accepted as the critical centile rating in studies concerned with the Preference Record.³

³G. Frederic Kuder, Revised Manual, p. 4.

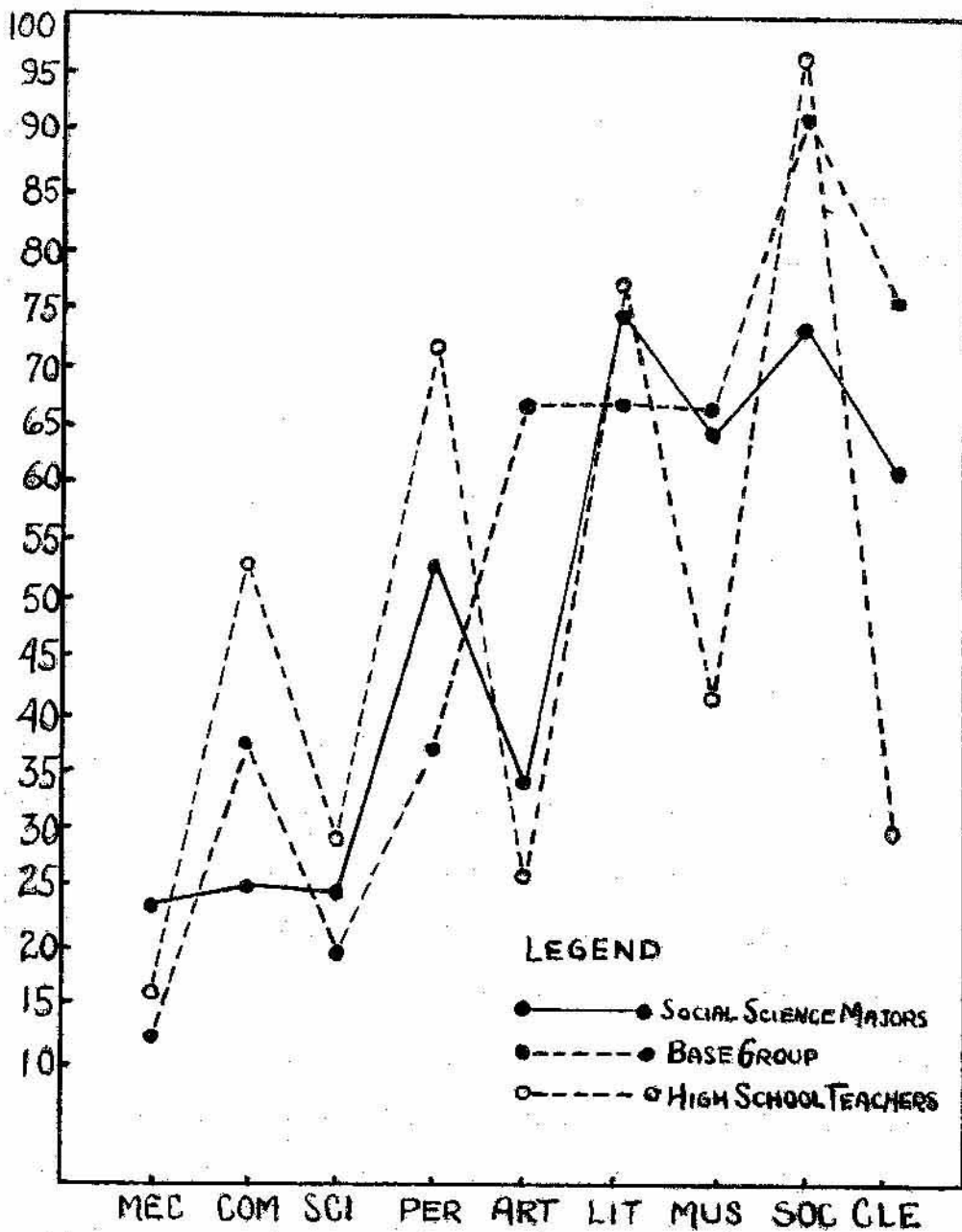


Figure 1. Relationship of Mean Scores of Social Science Majors, Base Group, and High School Teachers in Terms of Centile Rank

For the High School Teachers the highest centile ratings were in the fields of social service, with a centile rank of ninety-seven; literary, with a centile rank of seventy-seven; and persuasive, with a centile rank of seventy-seven.

The lowest ratings were obtained in four areas: mechanical, with a centile rank of six; scientific, with a centile rank of nineteen; artistic, with a centile rank of twenty-six; and clerical, with a centile rank of thirty.

The highest levels of centile rank for the Base Group were found in the scales of social service and clerical, the activities ranking at the ninety-first and seventy-sixth centiles, respectively. The lowest centile ranks were obtained in the mechanical, scientific, and persuasive areas, all below the fiftieth centile level. It would appear that the group of Social Science Majors are most closely related to the High School Teachers in professed interests. Using the Pearson product-moment formula, a coefficient of $.509 \pm .247$ was found between the mean scores of these two groups. This correlation would tend to show that there is a positive and significant relationship between their scores. The disparity between mean scores is probably due to the inclusion of a new scale; since the items of the test (the number of which remains essentially the same) must be divided into ten groups rather than nine.

One of the greatest differences between High School Teachers and Social Science Majors was in the mean scores of musical activities. In this area the experimental group most closely resembles the pattern of the Base Group.

The Discriminant Function

A pattern of interests has been established for Social Science Majors. The critical problem of ascertaining the relative degrees of importance of these nine fields, i. e., what weights are needed to express the relation between the experimental group and the criterion score is solved by the use of the Fisher discriminant function. Table III presents

TABLE III
RELATIVE WEIGHTS USED IN
OBTAINING A CRITERION REGRESSED SCORE

SCALE	WEIGHTS
Mechanical	- 63
Computational	+ 147
Scientific	- 3
Persuasive	- 51
Artistic	+ 27
Literary	+ 22
Musical	- 44
Social service	- 8
Clerical	- 116

these weights. They are to be applied to the separate scores an individual makes on the parts of the test to obtain a single score which represents his similarity to the group of Social Science Majors in the nine areas of the Preference Record. In Table IV an actual set of raw scores have been

TABLE IV
EXAMPLE OF THE COMPUTATION OF WEIGHTED SCORES

SCALE	WEIGHT		RAW SCORE	
Mechanical	- 63	x	33	- 2079
Computational	+ 147	x	16	+ 2352
Scientific	- 3	x	49	- 147
Persuasive	- 51	x	14	- 714
Artistic	+ 27	x	29	+ 783
Literary	+ 22	x	29	+ 638
Musical	- 44	x	14	- 616
Social Service	- 8	x	69	- 552
Clerical	- 116	x	33	- 3828
				+ 9532
	Sum of positive numbers			+ 13305
	Sum of negative numbers			- 7936
	Algebraic Total			+ 5369

Social Science Major Score \times algebraic total .100 and rounded to the nearest whole figure

SCORE 54

used to show how the weights are employed to arrive at a weighted score. The raw score of each scale is multiplied by the weighting factor. The algebraic total of positive and negative numbers is divided by 100 and rounded to the nearest whole number. This gives the regression score, a composite score based on all nine scales.

Table V presents the centile ranke which has been assigned to intervals of regressed scores of Social Science Majors. Using the table to find the centile rank of a regressed score of fifty-four, it is found to be located in the interval of 50-57 which is at the ninety-fifth centile level. Since this level exceeds the critical centile rank, it could be assumed that all scores above forty would tend to indicate an interest pattern which can be differentiated from the interest pattern of the Base Group.

Within the Social Science students used in this study, there is a natural division, each group following a somewhat different pattern. One group is the majors who checked the survey item, "the job you have now," or "the same kind of job but with some changes in working conditions or people you work with;" the other group includes those who marked "a different kind of work entirely." Therefore, it might be assumed that we have a group of people who ought not to be social science majors; as well as, a group of people who are reasonably content with their present major. Comparison of

TABLE V

CENTILE RANK OF REGRESSED SCORES
OF SOCIAL SCIENCE MAJORS

REGRESSED SCORES	CENTILE RANK
66 - 71	99.9
58 - 65	98
50 - 57	95
42 - 49	87
34 - 41	68
26 - 33	52
18 - 25	32
10 - 17	26
2 - 9	13
-6 - 1	8
-14 - -5	3

these two groups is a means of evaluating this hypothesis and the discrimination of the test as well. For the sake of brevity the groups hereafter will be designated as "Like" and "Different."

The mean raw scores of the "Like" group tend to be higher in the areas of social service, literary, scientific, persuasive, and artistic activities; while the "Different" group obtained higher scores in the fields of computational, musical, and clerical activities.

Table VI, shown on page 29, presents the mean raw scores of these two groups. For example, in the mechanical area, the mean raw scores of the "Like" group was 35.47 as compared to the "Different" group with a mean raw score of 32.95.

The pattern of the "Like" group is characterized by the high centile ratings in social service and literary activities. The "Different" group is highest in computational, musical, and clerical areas. The two groups tend to be closer to a common rating in the area of persuasive activities.

In comparing the "Like" and "Different" groups with the High School Teachers, it can be seen that, on the whole, the "Like" group more closely resembles the characteristic pattern of the High School Teachers than does the "Different" group.

TABLE VI

MEAN RAW SCORES OF "LIKE" GROUP AND "DIFFERENT"
GROUP OF SOCIAL SCIENCE MAJORS

SCALE	"LIKE" MEAN	"DIFFERENT" MEAN
Mechanical	35.47	32.95
Computational	23.24	26.71
Scientific	36.84	32.47
Persuasive	47.13	45.85
Artistic	20.00	18.57
Literary	27.86	24.81
Musical	13.23	14.22
Social Service	58.02	43.04
Clerical	48.15	54.95

In Figure 2 the relationship of the "Like" and "Different" groups in terms of the centile rank of mean scores shows the disparity more clearly.

As can be seen in Figure 2, the computational mean score of the "Different" group approaches the peak of the High School Teachers more closely than the "Like" group. In the clerical field the "Different" group stand at the forty-sixth centile as compared to a centile rating of thirty for both "Like" and High School Teachers.

66320

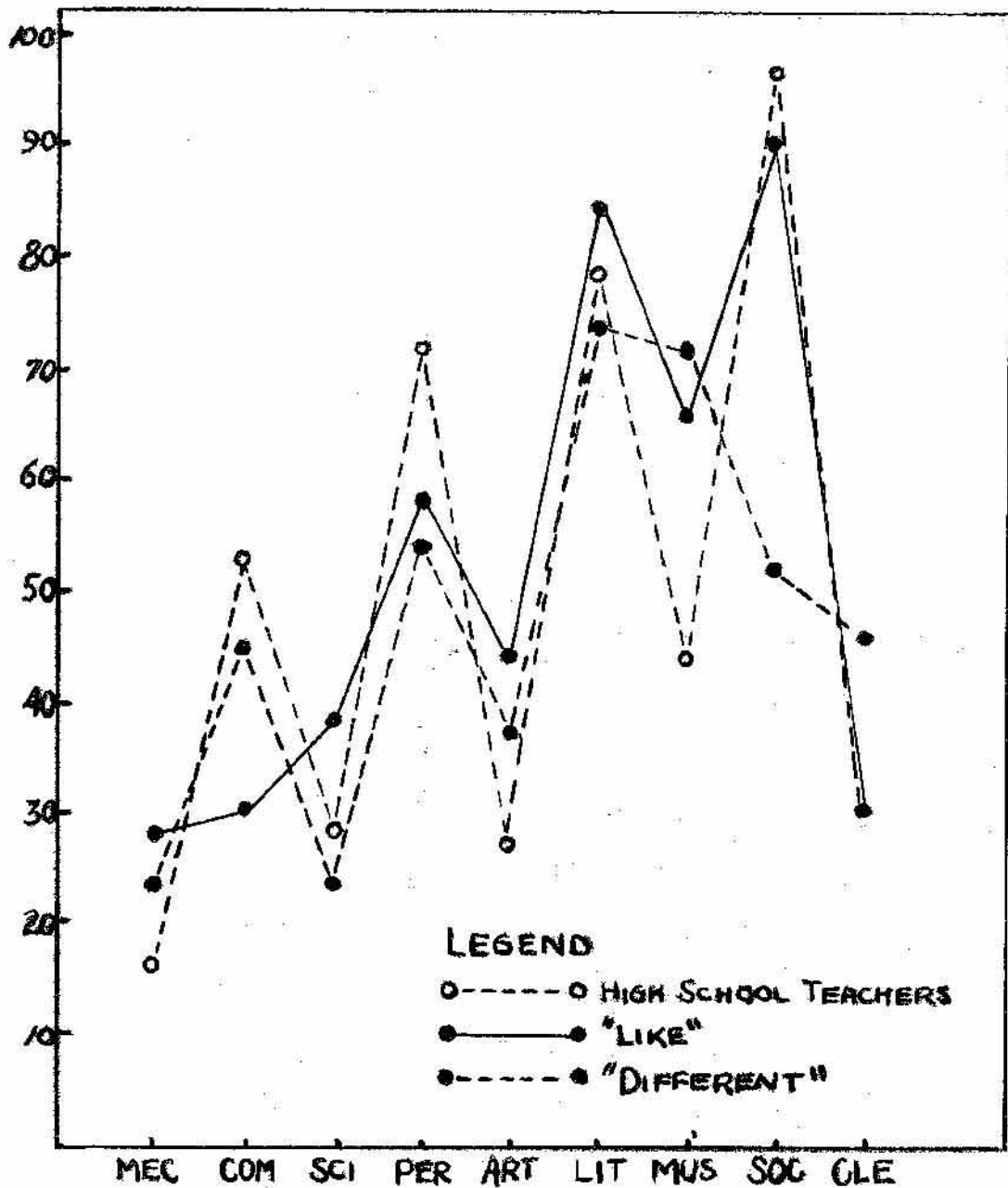


Figure 2. Relation of "Like" and "Different" Groups in Terms of Centile Rank of Mean Scores.

The t-test³ was used to find the significant differences between the "Like" and "Different" groups. A significance ratio was obtained in the scientific, literary, and social service scales. The most significant difference was found in the social service area with a t-score of 4.37, significant at the one-tenth per cent level. In the scientific area the significance ratio was 2.92, significant at the one per cent level. The literary scale showed a difference at the twenty per cent level of significance with a t-score of 1.38.

Table VII, shown on page thirty-two, presents the per cent of students from both the "Like" and "Different" groups in terms of centile groups based on the centiles shown in Table V.

The "Like" and "Different" groups have been broken down into centile ranking of regressed scores obtained from the weighted factors and expressed in terms of per cent.

Seventy-six per cent of the "Like" group were above the fiftieth centile as compared to fifty-three per cent of the "Different" group. The per cent of the "Different" group having regressed scores below the fiftieth was forty-seven per cent which was almost double the twenty-four per cent of the "Like" group at the same centile level.

³E. F. Lindquist, A First Course in Statistics (Boston: Houghton-Mifflin Company, 1942), p. 138.

TABLE VII

PER CENTS OF "LIKE" AND "DIFFERENT" GROUPS RANKING
AT THE SEVENTY-FIFTH OR ABOVE, FIFTIETH TO
SEVENTY-FOURTH, TWENTY-FIFTH TO FORTY-NINTH,
AND BELOW THE TWENTY-FIFTH CENTILE LEVEL

CENTILE LEVEL	PER CENT	
	"LIKE"	"DIFFERENT"
75 or above	44	33
50 to 74	32	20
25 to 49	17	14
Below 25	7	33
TOTAL	100	100

It can be seen that weighted scores give a desirable distribution for our group of students who "like" what they are doing, but the spread of scores among the other group is heavily weighted at the extremes with relatively few cases in the middle. This type of distribution is probably the result of some variable not taken into account by the weighting of scores indicated by this study.

On the basis of the results of weighting scores of Social Science Majors, it would seem that there is a differentiation present. It discriminates consistently enough at higher and lower levels of centile rank to base a distinction

between those who are satisfied in a pattern of Social Science interests and those who do not profess interests in that field of endeavor. A low weighted score on this test would be indicative of an individual not likely to be happy as a Social Science Major; whereas, one might expect an individual with a high weighted score to remain the field of Social Science with more or less satisfaction.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

It was the purpose of this study to compare the interests of social science majors with the interests of other adults based on the data gathered from a survey of sixty-two male students of Kansas State Teachers College, Pittsburg, Kansas who were majoring in social science. A differentiation between preferences of social science majors and those of the general population was made using Fisher's discriminant function equation.

A group of 121 social science majors were tested by means of a special mailing form (Form C) of the Kuder Preference Record. There were eighty returns, eight of which had to be rejected because of low verification scores. Of the seventy-two returns remaining, sixty-two were male and ten female. Because of the small sampling of females, it was thought advisable to omit them from the study.

Included in the special mailing form, were three items of information designed to denote satisfaction or dissatisfaction with the present occupation. These instructions were:

"If you had your choice, which of the following would you choose, if each paid the same? (Check one)

- ___ The job you have now.
- ___ The same kind of work but with some changes in the working conditions or people you work with.
- ___ A different kind of work entirely."

Twenty-two cases chose the "job you have now," fifteen chose the second item, twenty-one said that they wanted a different kind of work. Expressed in percentages this was: forty-two per cent, twenty-four per cent, and thirty-four per cent respectively.

The mean age for the sampling was 27.59 or approximately twenty-seven years and six months.

The mean raw scores of the Social Science Majors group tended to show a pattern of interest with the highest centile ranks being obtained in the literary area, with a centile rank of seventy-five; social service, with a centile rank of seventy-four; and musical, with a centile rank of sixty-five. The lowest centile ratings were in mechanical, computational, and scientific areas; the three tending to approach a common level at the twenty-fifth centile.

In the comparison of these scores with the mean raw scores of Kuder's Base Group and his High School Teachers of Social Studies group, it was found that the scores of Social Science Majors tended to more closely resemble the High School Teachers of Social Studies. Using the Pearson product-moment

formula, a coefficient of $.509 \pm .247$ was found between these two groups; which would tend to show that there is a positive and significant relationship between the two groups.

Fisher's discriminant function equation was used to obtain relative weights which could be applied to raw scores to produce a criterion regressed score. These relative weights were: (1) mechanical, -63; (2) computational, +147; scientific, -3; (4) persuasive, -51; (5) artistic, +27; (6) literary, +22; (7) musical, -44; (8) social service, -8; and (9) clerical, -116.

A centile rank was assigned to intervals of regressed scores of the Social Science Majors.

Within the Social Science group used in this study, there was a natural division, each group following a somewhat different pattern. One group was the majors who checked the survey item, "the job you have now," or the second item, "the same kind of work but with some changes." The other group included those who checked "a different kind of work entirely." These groups were designated "Like" and "Different."

The mean raw scores of the "Like" group tended to be higher in the areas of social service, literary, scientific, persuasive, and artistic activities; while the "Different" group obtained higher scores in the fields of computational, musical, and clerical activities.

In comparing the "Like" and "Different" groups with High School Teachers of Social Studies, it was found that the "Like" group most closely resembled the High School Teachers.

Seventy-six per cent of the "Like" group were above the fiftieth centile as compared to fifty-three per cent of the "Different" group. Forty-seven per cent of the "Different" group had regressed scores below the fiftieth centile--almost double the twenty-four per cent of the "Like" group.

The weighted scores gave a desirable distribution. The spread of scores among the "Different" group was heavily weighted at the extremes, probably due to the result of some variable not taken into account by the weighting of scores.

Conclusions

On the basis of the weighted scores of Social Science Majors, it would seem that differentiation is possible. Weighted scores discriminate consistently enough at higher and lower levels of centile rank to permit a distinction between those who are satisfied in a pattern of social science interests and those who do not profess interests in this field of endeavor. A low weighted score on this test would be indicative of an individual not likely to be happy as a social science major; whereas, one might expect an individual with a high score to remain in the field of social science with more or less satisfaction.

While the Kuder Preference Record is the preferred test in guidance centers, the weighting of scores made possible by this study should permit greater use in selection of prospective social science students.

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APPENDIX A

Survey of Activity Preferences

FORM 8

Please read the directions on the blue slip of paper. Then start with the questions below.

	Most	Least
Take special notice of people when you are traveling		
Take special notice of the scenery when you are traveling		
Take special notice of the crops when you are traveling		
Read lessons to a blind student		
Keep a record of traffic past a certain point		
Interview people in a survey of public opinion		
Go to the amusements at a country fair		
See the exhibits of canned goods at a country fair		
See the livestock at a country fair		
Exercise in a gymnasium		
Go fishing		
Play baseball		
Browse in a library		
Watch a rehearsal of a large orchestra		
Visit an aquarium		
Collect the signatures of famous people		
Collect butterflies		
Collect pieces of different kinds of wood		
Visit an exhibit of famous paintings		
Visit an exhibit of various means of transportation		
Visit an exhibit of laboratory equipment		
Sell vegetables		
Be an organist		
Raise vegetables		
Be the chairman of the social committee for a club dance		
Decorate the hall for the dance		
Send out the announcements of the dance		
Visit a museum of science		
Visit an advertising agency		
Visit a factory in which typewriters are made		
Read a story to a sick person		
Teach tricks to a dog		
Take apart a toy that won't work to see how to repair it		
Take a course in sketching		
Take a course in biology		
Take a course in metal working		
Build bird houses		
Write articles about birds		
Draw sketches of birds		
Tinker with a broken sewing machine		
Play a piano		
Sketch an interesting scene		
Listen to a radio program on how to grow good fruit		
Listen to a radio program on how to make things of plastic		
Listen to a radio program on how to get natural photographs of wild animals		
Write a newspaper column of advice on personal problems		
Raise fine dogs		
Conduct studies on the effectiveness of different types of sales letters		
Be an authority on contract bridge		
Be an authority on soil erosion		
Be an authority on billboard advertising		
Visit a motion picture studio		
Visit a national park famous for its mountain scenery		
Visit a former battlefield		

Now please go on to the next column

DIRECTIONS

This blank is used for obtaining a record of your preferences. Please follow the directions carefully in order that the report of how your preferences compare with those of others may be of most value to you.

This is not a test. There are no answers which are right or wrong for everyone. An answer is right if it is true of you. Your answers will be kept strictly confidential.

A number of activities are listed in groups of three in the blank. First read over the three activities in each group. Decide which of the three activities you like most and then make a cross through the left of the two circles following this activity. Then decide which activity you like least and make a cross through the right hand circle of the two circles following this activity.

In the following example, the person answering has indicated that if he had his choice of the three activities, he would usually like to visit a museum most, and visit an art gallery least.

	Most	Least
Visit an art gallery		×
Browse in a library	×	
Visit a museum	×	

In the next example, he has indicated he would ordinarily like to collect coins most and collect butterflies least, of the three activities named.

Collect autographs		
Collect coins	×	
Collect butterflies		×

(Over)

Take orders for merchandise over the telephone		
Ask people's opinion over the telephone for a survey of public opinion		
Be a person who buys merchandise to be sold in a department store		
Interview people applying for work in a store		
Be a cowboy		
Be in charge of employing people for a business		
Write articles about wild animals		
Write a column of personal advice for a newspaper		
Read about modern business methods		
Read about customs of people in other countries		
Read about modern farming methods		
Work at a weather station in the Arctic		
Work at a weather station in a city		
Work at a weather station in the mountains		
Be well known as a director of scientific research		
Be well known as a social worker		
Be well known as a literary critic		
Design the scenery for a play		
Make a chemical analysis of a new toothpaste		
Write an article for housewives on how to repair household appliances		
Interview applicants for relief		
Try out different sales letters to see which type works best		
Work on the development of more efficient methods of handling office work		
Edit the financial news for a newspaper		
Work on the development of a lighter and stronger metal		
Manage a model village for factory workers		
Visit a fine art museum		
Visit a recreation center for people in the slums		
Visit a famous medical research laboratory		

Now go on to the next page

Be responsible for dismissing unsatisfactory workers from a company	0	0
Be responsible for talking to workers who are not doing very good work	0	0
Be responsible for hiring new workers for a company	0	0
Compile a dictionary of slang	0	0
Discover a cure for hay fever	0	0
Install improved office procedures in a big business	0	0
Read about the history of the drama	0	0
Read about early musical forms	0	0
Read about experiments on the effect of language on behavior	0	0
Make chemical analyses of new commercial products	0	0
Work on developing an artificial lung which will allow the wearer to move about freely	0	0
Construct charts to show business conditions	0	0
Put advertising circulars in cars passing a street corner	0	0
Count the number of cars passing the corner at different hours	0	0
Direct traffic at the street corner	0	0
Give exercises to crippled children	0	0
Grow vegetables for the market	0	0
Teach basket-making and weaving	0	0
Solicit money for a community chest	0	0
Write daily reports of the progress of a community chest drive	0	0
Make a record of the community chest pledges as they come in	0	0
Take charge of the arrangements for a big wedding	0	0
Address the invitations to a big wedding	0	0
Write a news article about a big wedding	0	0
Write novels	0	0
Conduct research on the psychology of music	0	0
Make pottery	0	0
Conduct research on the effectiveness of various types of selling methods	0	0
Sort mail in a post office	0	0
Raise chickens	0	0
Write a newspaper column on current events	0	0
Give popular lectures on chemistry	0	0
Help young people select their vocations	0	0
Have someone you trust make your decisions for you most of the time	0	0
Have someone you trust make your decisions for you once in a while	0	0
Make all your decisions yourself	0	0
Supervise a large department in a store	0	0
Conduct research on television	0	0
Be a director of recreation for a welfare organization	0	0
Supervise the work of several typists	0	0
Interview people who are applying for jobs	0	0
Be a private secretary	0	0
Draw a comic strip	0	0
Write advertising for electrical appliances	0	0
Operate a truck farm	0	0
Experiment with making some candy for which you don't know the recipe	0	0
Tell stories to children	0	0
Paint water colors	0	0
Do chemical research	0	0
Interview applicants for employment	0	0
Write feature stories for a newspaper	0	0
Sketch an interesting scene	0	0
Try out various types of sails on a toy sailboat to see which works best	0	0
Write an essay in the style of a certain author	0	0
Sell tickets for an amateur play	0	0
Prepare the copy for the programs and tickets for the play	0	0
Be the treasurer for the play	0	0
Determine cost of producing a new type of dishwasher	0	0
Convince financiers to back a company to make the dishwasher	0	0
Teach people to use the dishwasher	0	0

Now please go on to the next column

Organize results from surveys of public opinion	0	0
Write editorials for a newspaper	0	0
Teach handicraft in a camp for children from the slums	0	0
Read about the causes of various diseases	0	0
Read about how leaders of industry achieved success	0	0
Read about how to raise livestock	0	0
Go to a party where most of the people are strangers	0	0
Go to a party where you know most of the people	0	0
Go to a party composed equally of strangers and people you know	0	0
Sell artists' supplies	0	0
Grow seed for florists	0	0
Raise white mice for scientists	0	0
Perform laboratory experiments	0	0
Make furniture	0	0
Sell insurance	0	0
Weight packages and look up how much postage they should have	0	0
Read manuscripts submitted for publication	0	0
Try out new automobiles to find out how they can be improved	0	0
Be an expert on cutting jewels	0	0
Conduct research on developing a substitute for rubber	0	0
Be a radio music commentator	0	0
Help in a sickroom	0	0
Sell musical instruments	0	0
Repair household appliances	0	0
Design flower pots	0	0
Supervise the manufacture of flower pots	0	0
Work out a more efficient method of making flower pots	0	0
Compute customers' bills in a cafeteria	0	0
Teach children to make model airplanes	0	0
Keep the records for a scientist conducting medical research	0	0
Direct a playground for underprivileged children	0	0
Be a cook in a restaurant	0	0
Sell chemical supplies	0	0
Assemble a good assortment of woodworking tools	0	0
Make a scrapbook of pictures of paintings you like	0	0
Get together a first-aid kit for use in an emergency	0	0
Direct an amateur play	0	0
Get the programs and tickets printed for the play	0	0
Write the play	0	0
Play checkers with someone who usually beats you	0	0
Play checkers with someone who hardly ever beats you	0	0
Play checkers with someone of about your own ability	0	0
Prepare the advertising copy for a new dishwasher	0	0
Determine the cost of producing the dishwasher	0	0
Sell dishwashers	0	0
Write a column of local gossip for a newspaper	0	0
Write a column of personal advice for a newspaper	0	0
Write a column on gardening for a newspaper	0	0
Be an explorer	0	0
Be a designer	0	0
Be an inventor	0	0
Pick cherries	0	0
Drive a tractor on a farm	0	0
Work in a chemistry laboratory	0	0
Take a course in public speaking	0	0
Study sociology	0	0
Study story writing	0	0
Operate a calculating machine	0	0
Put together the parts of calculating machines	0	0
Sell calculating machines	0	0

Now please go on to the next column

Build boats	0	0
Settle labor disputes	0	0
Compose music	0	0
Be the most successful in the country	0	0
Be a certified pilot	0	0
Be an authority on	0	0
Develop more efficient business concerns	0	0
Be a practical manager	0	0
Develop improved methods	0	0
Repair a broken electric iron	0	0
Build a fire in a	0	0
Type a letter for	0	0
Manage a music	0	0
Draw plans for	0	0
Investigate social communities	0	0
Take apart a new car to see how it works	0	0
Play checkers	0	0
Play chess	0	0
Keep the books in	0	0
Develop new films	0	0
Consult with people on problems	0	0
Catch fish for a	0	0
Pick out the trees in	0	0
Paint cars in a	0	0
Be a social service	0	0
Be the social secretary	0	0
Prepare the advertising house	0	0
Write up a true	0	0
Write an article on	0	0
Write an article on	0	0
Wait on table in	0	0
Look up addresses in city directory	0	0
Take care of sick	0	0
Model in clay	0	0
Write an article on convincing people	0	0
Be the prompter in	0	0
Be a physician	0	0
Be a sculptor	0	0
Be a journalist	0	0
Answer letters of people who write of typewriter	0	0
Compile data on the	0	0
Keep the typewriter	0	0
Study propaganda	0	0
Make a study of	0	0
Make a study of the United States	0	0
Look for errors in	0	0
Wash dishes	0	0
Cook a meal	0	0
Teach architecture	0	0
Solicit advertisements	0	0
Repair watches	0	0
Cook a meal	0	0
Mend a broken	0	0
Give someone a	0	0
Go on expedition	0	0
Go on expedition	0	0
Do social welfare	0	0
Be a portrait painter	0	0
Conduct research on earthquakes	0	0
Be a mechanical	0	0

Now please go on to the next column

Help people on relief plan their budgets	0	0
Put the proper labels on library books	0	0
Be an expert on the care of trees	0	0
Sell in a store	0	0
Work on a ranch	0	0
Work in a publishing house	0	0
Be a professor of mathematics	0	0
Be a publicity director for a big university	0	0
Be a professor of a foreign language	0	0
Take a course in business-letter writing	0	0
Take a course in printing	0	0
Take a course in selling	0	0
Draw plans for houses	0	0
Write the advertising for new real estate developments	0	0
Write articles about new ideas in building houses	0	0
Buy an expensive article on the installment plan	0	0
Borrow money from a friend to buy the article	0	0
Save until you can pay cash for the article	0	0
Decorate furniture	0	0
Supervise workers in sugar beet fields	0	0
Raise turkeys	0	0
Help young people select vocations	0	0
Design new fabrics	0	0
Make estimates on the cost of printing books and circulars	0	0
Build a hand loom	0	0
Derive mathematical formulas for predicting trends in business	0	0
Make a survey to discover youths' attitudes on attending church	0	0
Make a life mask of a famous person	0	0
Write an article on how dealers determine what prices to charge	0	0
Compose a theme song for a radio program	0	0
Test various brands of products for a co-operative store to see which are best	0	0
Take care of the bulletin boards in a large business organization	0	0
Keep accounting machines in good order	0	0
Have people treat you as a comrade	0	0
Have people treat you as superior to them	0	0
Have people pay no attention to you	0	0
Be a music teacher	0	0
Be an artist for an advertising agency	0	0
Conduct research on what makes jokes funny	0	0
Go shopping for a sick person	0	0
Make a jigsaw puzzle for a sick person	0	0
Read to a sick person	0	0
Help in giving first aid at a hospital	0	0
Sell flowers in a florist's shop	0	0
Be a private secretary	0	0
Edit the financial pages of a newspaper	0	0
Farm a large tract of land	0	0
Sell real estate	0	0

Now please go on to the next column

Take care of deaf people	0	0
Draw graphs based on statistical tables	0	0
Clerk in a store	0	0
Be a writer	0	0
Be an authority on billboard advertising	0	0
Be a religious leader	0	0
Have work you like with high pay	0	0
Have work you like with low pay	0	0
Have work you don't like with high pay	0	0
Teach people on relief how to keep in good health	0	0
Write feature articles for a newspaper	0	0
Be an art dealer	0	0
Be the secretary of a Congressman	0	0
Teach children to model and paint	0	0
Write articles for an art magazine	0	0
Choose your own clothes	0	0
Get advice on choosing your clothes	0	0
Have someone else choose your clothes	0	0
Draw plans for bridges	0	0
Do work which requires a lot of mental arithmetic	0	0
Do clerical work	0	0
Supervise the manufacture of greeting cards	0	0
Determine the cost of producing the greeting cards	0	0
Design the greeting cards	0	0
Take a broken lock apart to see what is wrong with it	0	0
Check for errors in the copy of a report	0	0
Add columns of figures	0	0
Have someone make you look foolish	0	0
Make someone else look foolish	0	0
Not have anyone made to look foolish	0	0
Be a psychologist	0	0
Supervise the erection of bridges	0	0
Be a landscape architect	0	0
Investigate the causes of mental illness	0	0
Study music arrangement	0	0
Study shorthand	0	0
Be a street car conductor	0	0
Be a lighthouse keeper	0	0
Be a watchman at a railroad crossing	0	0
Write advertising	0	0
Be in charge of a public library	0	0
Publish a newspaper	0	0
Take a course in cost accounting	0	0
Take a course in salesmanship	0	0
Take a course in business English	0	0
Write a play	0	0
Be in charge of selling tickets for a play	0	0
Be the property manager for a play	0	0

Now go on to the next page

	MOST	LEAST
Draw funny pictures of famous people	0	0
Paint portraits of famous people	0	0
Paint pictures of scenery	0	0
Draw illustrations for magazines	0	0
Write articles for magazines	0	0
Be the sales manager of a magazine	0	0
Stay at a fashionable resort	0	0
Go on a camping trip	0	0
Take a trip over back country roads	0	0
Live with a famous dramatic critic	0	0
Live with a famous social worker	0	0
Live with a famous artist	0	0
Write articles on hobbies	0	0
Construct tables of figures on costs of living	0	0
Repair and refinish old furniture	0	0
Read printer's proof of books for children	0	0
Tell stories to children	0	0
Make children's toys	0	0
Take a course in physical education	0	0
Take a course in shop work	0	0
Take a course in mathematics	0	0
Be a piano tuner	0	0
Be a school teacher	0	0
Be a dentist	0	0
Be a court stenographer	0	0
Be the business manager for a famous pianist	0	0
Be a vocational counselor	0	0
Visit a museum of natural history	0	0
Visit an airplane factory	0	0
Visit the slums of a city	0	0
Draw pictures for magazine stories	0	0
Raise beef cattle	0	0
Grow fruit for the market	0	0
Be a bell boy in a hotel	0	0
Carry out the dirty dishes in a restaurant	0	0
Live by yourself on an island	0	0
Be a guide on camping trips	0	0
Design camp equipment	0	0
Sell camp equipment	0	0
Sell life insurance	0	0
Write stories for magazines	0	0
Be a landscape gardener	0	0
Be known as modest	0	0
Be known as reliable	0	0
Be known as happy-go-lucky	0	0
Teach arithmetic	0	0
Train dogs to lead blind people	0	0
Be the secretary of a famous scientist	0	0

Now go on to the next column

	MOST	LEAST
Take a course in modern music	0	0
Take a course in the modern novel	0	0
Take a course in modern painting	0	0
Be considered hard-boiled	0	0
Be considered fair-minded	0	0
Be considered intelligent	0	0
Be an orchestra conductor	0	0
Be the manager of a large office	0	0
Direct slum clearance projects	0	0
Grow flowers	0	0
Operate a mimeograph	0	0
Compute bills for a store	0	0
Guide visitors in a national park	0	0
Make fine jewelry	0	0
Arrange music for an orchestra	0	0
Work at a telephone switchboard	0	0
Make linoleum block bookplates	0	0
Teach games to children	0	0
Repair a broken ironing board	0	0
Wash dishes	0	0
Put a room in order	0	0
Teach cabinet making	0	0
Read proof for a newspaper	0	0
Import oriental rugs	0	0
Be a private secretary	0	0
Be a bookkeeper	0	0
Be a salesman	0	0
Do figure skating	0	0
Play polo	0	0
Climb mountains	0	0
Work at a desk	0	0
Work on a ranch	0	0
Do house-to-house selling	0	0

Now go on to the next column

	MOST	LEAST
Work in a candy factory	0	0
Keep bees	0	0
Give eye examinations	0	0
Be a farmer	0	0
Be a railroad conductor	0	0
Be an office worker	0	0
Do clerical work	0	0
Teach English literature	0	0
Sell art supplies	0	0
Study accounting	0	0
Study irrigation methods	0	0
Study stenography	0	0
Deliver mail	0	0
Collect garbage	0	0
Sort mail in a postoffice	0	0
Be a poet	0	0
Be an artist	0	0
Be a social service worker	0	0
Work mathematical puzzles	0	0
Play checkers	0	0
Work mechanical puzzles	0	0
Start a newspaper	0	0
Start an art school	0	0
Start an orchestra	0	0
Have friends	0	0
Have power	0	0
Have fame	0	0
Be a machinist	0	0
Be an architect	0	0
Be a chemist	0	0
Bind books	0	0
Look after sick children	0	0
Type letters	0	0

If you wish a report of your scores, please print your name and address below:

() Mrs.
() Miss
() Mr. _____
Address _____

Your age _____ Sex (M or F) _____ Date _____

What is your occupation? (Such as auto repairman, housewife, surgeon, railroad conductor, etc. Please be specific. For example, if you are a salesman, please tell what you sell; if you are a machinist, please tell what kind of machines you operate.) _____

Please describe briefly what you do in your work: _____

If you had your choice, which of the following would you choose, if each paid the same? (Check one).

_____ The job you have now.

_____ The same kind of work but with some changes in the working conditions or people you work with.

_____ A different kind of work entirely.

How long have you been in your present kind of work? _____

Thank you very much indeed for your help.

APPENDIX B

SUPPLEMENTARY INSTRUCTIONS

for the

KUDER PREFERENCE RECORD VOCATIONAL

FORM C

Note: A manual for Form C is now being compiled. This set of supplementary instructions is provided for use with the manual for Form BB until the new manual is available.

NEW FEATURES

Form C yields two new scores in addition to those obtained from Form B.

One of these is the "Outdoor" scale which measures expressed preferences for outdoor, naturalistic, and agricultural activities. It is designated as Scale O.

The other new score is called the "Verification" score. It is intended to help identify those who have not followed the directions or who have answered carelessly.

The occupational areas in which scores are now obtainable are as follows:

- | | |
|------------------|-------------------|
| 0. Outdoor | 5. Artistic |
| 1. Mechanical | 6. Literary |
| 2. Computational | 7. Musical |
| 3. Scientific | 8. Social service |
| 4. Persuasive | 9. Clerical |

ADMINISTRATION

Form CH and Form CM are entirely self-administering. Directions explaining how to mark the answers are given in the booklet. Persons taking the test are given copies of the booklet and told to read the directions. They then go ahead marking their preferences for the various activities.

There is no time limit. Adults will usually require about forty minutes to complete the test. High school students may take slightly longer.

SCORING AND PROFILING

Directions for scoring Form CH which uses the pin-punch method are given on the answer pad.

Scoring can be done quickly and easily by the person taking the test. For Form CM complete directions for scoring the machine-scored answer sheet are furnished with the scoring stencils.

After the answer pad or answer sheet has been scored, the subject may be told to construct his own profile following the directions contained on the profile sheet. It should be noted that the subject is asked to copy the scores on the profile sheet and then to inspect the first score (the Verification score.) He is told that if his score is not within the range of 38 to 44, inclusive, there is some reason for doubting the value of the answers given, and that he should consult his adviser. There are at least three possible explanations for scores of 37 or less: (a) The subject may not have followed the directions exactly, that is, he may not have answered with one first choice and one last choice to each item, but may rather have omitted some answers. (b) He may have answered carelessly, thus failing to mark those responses which almost every one makes. (c) He may actually be an extreme deviate with respect to his preferences. If the score is 45 or more, it is evident that the subject has marked more than just the first and last choices to one or more questions. A score of 44 is the highest possible when the directions are followed.

If an inspection of the answer pad reveals that the subject has not followed the directions, this fact should be called to his attention and he should be asked to fill out the form again following the directions exactly. If, however, the inspection reveals that there is only one first and one last choice indicated for each item, the subject whose score is outside of the range 38 to 44 should be told merely that there appears to be some reason for doubting the value of the answers he gave to the blank. He should

03

OUTDOOR SCIENTIFIC

Blight control specialist
Cattle breeder
Collector of sea specimens
Crop forecaster
Dairy herd tester
Drug grower
Epidemic control specialist
Fertilizer experimenter
Fish culturist
Frog culturist
Grain developer
Horticulturist
Incubator specialist
Machinery inventor
Medicinal plant collector
Mineral analyzer
Pest control specialist
Plant breeder
Plant experimenter
Plant quarantine specialist
Poultry culler
Rabbit fancier
Seed sorter
Weather observer

04

OUTDOOR PERSUASIVE

Barge captain
Coal mine inspector
Colliery superintendent
Corral boss
Cotton market operator
Cruise director
Dude ranch manager
Farm implement dealer
Field supervisor
Fishing equipment dealer
Garden supplies dealer
Health camp director
Hides and fur salesman
Hunting guide
Orchard foreman
Overseer

Park policeman
Park superintendent
Pet shop owner
Port captain
Produce broker
Rural canvasser
Safari guide
Seed supply dealer
Sightseeing tour conductor
Summer resort director
Supervisor of logging camp

05

OUTDOOR ARTISTIC

Arborculturist
Botanical artist
Bulb grower
Cemetery caretaker
Floral designer
Floriculturist
Greenskeeper
Histological illustrator
Horticulturist
Hothouse specialist
Landscape artist
Landscape designer
Leather and raffia craftsman
Memorial designer
Modeler of planes and boats
Park photographer
Raiser of show horses
Scenic photographer
Taxidermist
Topographical draftsman

06

OUTDOOR LITERARY

Author of handbooks on forestry,
agricultural topics, fishing,
hunting, marine topics
Columnist dealing with farm
advice

then be asked to fill it out again being particularly careful to follow the directions exactly and to give his sincere answers.

Those subjects whose scores fall within the acceptable range on the Verification scale are instructed on the profile sheet to read the rest of the directions and to follow them.

INTERPRETATION OF SCORES

The new Outdoor scale is given the number "0" in the series of ten. When it is used to form a "profile index" it should be listed first if it is one of the high scores. For example, 01 is the profile index of a person who has high scores in both the Outdoor and Mechanical areas. Table 1a gives lists of occupations suggested for consideration in interpreting profile indexes which include the Outdoor scale. It is intended for use with Table 1 in the manual for Form B.

TABLE 1a

(Supplement to Table 1 in manual for Form BB)

0

OUTDOOR

Animal husbandman
Animal trainer
Canal tender
Chicken rancher
Cotton farmer
Cowboy
Dairy farmer
Dog breeder
Explorer
Fence rider
Forest fire patrolman
Fruit grower
Game warden
Gardener
Grain farmer
Greenhouse keeper
Greenskeeper
Harvest hand
Horse breeder
Kennel manager
Lighthouse keeper
Line fisherman
Livestock farmer
Lumberjack
Miner
Mountain guide
Mushroom culturist
Net fisherman
Nurseryman
Orchardist
Park guide
Poultry farmer
Prospector

Racehorse trainer
Ranger
Rodeo performer
Seine fisherman
Sheep rancher
Sponge fisherman
Stockman
Sugar cane raiser
Tobacco grower
Trail blazer
Trapper
Truck farmer
Weather observer
Wood inspector

01

OUTDOOR MECHANICAL

Beekeeper
Boat repairman
Bridge tender
Combine operator
Cultivator operator
Farm tool mechanic
Forest fire deputy
Fruit grader
Game stocker
Groundskeeper
Gunsmith
Locomotive engineer
Orchard sprayer
Packing hand
Piling sawyer
Sheep clipper
Shiprigger
Sponge packer
Steeplejack
Tree grafter
Tree pruner
Tugboat mate

02

OUTDOOR COMPUTATIONAL

Agricultural statistician
Bookkeeper for ranch
Business manager for
cooperative farm
Camp purchasing agent
Checker and weigher of
farm produce
Crop appraiser
Geodetic computer
Market dispatcher
Ship purser
Surveyor
Toll bridge cashier
Weather observer

Copy writer for fishing
equipment ads
Game and fishing editor
Historian on exploration
Radio announcer for farm program
Reporter on farm journal
Reporter of market news
Writer of animal stories
Writer of features about
explorations
Writer of articles on animal
husbandry, soil conservation,
plant experimentation,
irrigation control

Hiking leader
Home economics visitor
Lifeguard
Medical aide to missionary
Port physician
Port social worker
Probation officer
Public health nurse
Red Cross field worker
Secret service operator
Woodcraft instructor
Visiting nurse
Vocational arts instructor

07

OUTDOOR MUSICAL

Collector of ballads
Folk dance instructor
Teacher of folk music

08

OUTDOOR SOCIAL SERVICE

County demonstration agent
County health officer
Farm bureau agent
Farm pollster
Forest preservation instructor
4-H Club organizer

09

OUTDOOR CLERICAL

Camp paymaster
Dispatcher of farm produce
Farm market receiving clerk
Fruit inspector and checker
Forestry clerk
Park traffic checker
Produce classifier and culler
Purser
Recorder of scientific experiments
Recorder of temperature, humidity,
and rainfall
Rural postman
Rural postmaster
Specimen classifier
Timekeeper
Toll bridge cashier
Traffic checker

To obtain, free of charge, a copy of the complete manual for Form C
when it is available, fill in the label below and mail it to Science
Research Associates, 228 South Wabash Avenue, Chicago 4, Illinois.

**KUDER
PREFERENCE
RECORD
VOCATIONAL
FORM C**

KPR - V

SCIENCE RESEARCH ASSOCIATES
228 South Wabash Avenue, Chicago 4, Ill.

TO _____

APPENDIX C

SELF-INTERPRETING

PROFILE SHEET

for the
**KUDER PREFERENCE RECORD
VOCATIONAL**

Form C

MEN and WOMEN**DIRECTIONS FOR PROFILING**

Copy the V-Score from the back page of your answer pad in the box at the right.

If your V-Score is 37 or less, there is some reason for doubting the value of your answers, and your other scores may not be very accurate.

If your V-Score is 45 or more, you may not have understood the directions, since 44 is the highest possible score. If your score is not between 38 and 44, inclusive, you should see your adviser. He will probably recommend that you read the directions again, and then that you fill out the blank a second time, being careful to follow the directions exactly and to give sincere replies.

If your V-Score is between 38 and 44, inclusive, go ahead with the following directions.

Copy the scores 0 through 9 in the spaces at the top of the profile chart. Under "OUTDOOR" and the number which is the same as the score at the top. Use the numbers under M if you are a man and the numbers under F if you are a woman. Draw a line through this number from the side to the other of the entire column under OUTDOOR. Do the same thing for the scores at the top of each of the other columns. If a score is larger than any number in the column, draw a line across the top of the column; if it is smaller, draw a line across the bottom.

With your pencil blacken the entire space between the lines you have drawn and the bottom of the chart. The result is your profile for the Kuder Preference Record—Vocational.

Interpretation of the scores will be found on the other side.

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228 South Wabash Avenue, Chicago 4, Illinois.

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0		1		2		3		4		5		6		7		8		9		
OUTDOOR		MECHANICAL		COMPUTATIONAL		SCIENTIFIC		PERSUASIVE		ARTISTIC		LITERARY		MUSICAL		SOCIAL SERVICE		CLERICAL		
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
72	65	83	58	52	70	66	86	75	52	56						78	79	91	96	
	64	82	55	51	69	65	85	74	51	55						78	78	90	89	
	63	81	54	50	68	64	84	73	50	49	54			30		77	77	89	85	
		80	53	49	67	63	83	72	49	48						76	76	87	84	
		58	52	48	66	62	82	70	48		42			29		73		85		
71	62	87	57	51	65	61	81	67	46	53	41			28		72	76	83	92	
	61	86	56	50	64	60	80	68	45	52	40			27		70	75	82	90	
	60	85	55	49	63	59	79	66	44	51	39			26		69	74	80	88	
	59	84	54	48	62	58	78	65	43	50	38			25		68	73	78	87	
	58	83	53	47	61	57	77	64	42	49	37			24		66	72	76	86	
	57	82	52	46	60	56	76	63	41	48	36			23		65	71	74	83	
	56	81	51	45	59	55	75	62	40	47	35			22		64	70	72	82	
	55	80	50	44	58	54	74	61	39	46	34			21		63	69	71	81	
	54	79	49	43	57	53	73	60	38	45	33			20		62	68	70	80	
	53	78	48	42	56	52	72	59	37	44	32			19		61	67	68	79	
	52	77	47	41	55	51	71	58	36	43	31			18		60	66	65	78	
	51	76	46	40	54	50	70	57	35	42	30			17		59	65	64	77	
	50	75	45	39	53	49	69	56	34	41	29			16		58	64	63	76	
	49	74	44	38	52	48	68	55	33	40	28			15		57	63	62	75	
	48	73	43	37	51	47	67	54	32	39	27			14		56	62	61	74	
	47	72	42	36	50	46	66	53	31	38	26			13		55	61	60	73	
	46	71	41	35	49	45	65	52	30	37	25			12		54	60	59	72	
	45	70	40	34	48	44	64	51	29	36	24			11		53	59	58	71	
	44	69	39	33	47	43	63	50	28	35	23			10		52	58	57	70	
	43	68	38	32	46	42	62	49	27	34	22			9		51	57	56	69	
	42	67	37	31	45	41	61	48	26	33	21			8		50	56	55	68	
	41	66	36	30	44	40	60	47	25	32	20			7		49	55	54	67	
	40	65	35	29	43	39	59	46	24	31	19			6		48	54	53	66	
	39	64	34	28	42	38	58	45	23	30	18			5		47	53	52	65	
	38	63	33	27	41	37	57	44	22	29	17			4		46	52	51	64	
	37	62	32	26	40	36	56	43	21	28	16			3		45	51	50	63	
	36	61	31	25	39	35	55	42	20	27	15			2		44	50	49	62	
	35	60	30	24	38	34	54	41	19	26	14			1		43	49	48	61	
	34	59	29	23	37	33	53	40	18	25	13			0		42	48	47	60	
	33	58	28	22	36	32	52	39	17	24	12					41	47	46	59	
	32	57	27	21	35	31	51	38	16	23	11					40	46	45	58	
	31	56	26	20	34	30	50	37	15	22	10					39	45	44	57	
	30	55	25	19	33	29	49	36	14	21	9					38	44	43	56	
	29	54	24	18	32	28	48	35	13	20	8					37	43	42	55	
	28	53	23	17	31	27	47	34	12	19	7					36	42	41	54	
	27	52	22	16	30	26	46	33	11	18	6					35	41	40	53	
	26	51	21	15	29	25	45	32	10	17	5					34	40	39	52	
	25	50	20	14	28	24	44	31	9	16	4					33	39	38	51	
	24	49	19	13	27	23	43	30	8	15	3					32	38	37	50	
	23	48	18	12	26	22	42	29	7	14	2					31	37	36	49	
	22	47	17	11	25	21	41	28	6	13	1					30	36	35	48	
	21	46	16	10	24	20	40	27	5	12						29	35	34	47	
	20	45	15	9	23	19	39	26	4	11						28	34	33	46	
	19	44	14	8	22	18	38	25	3	10						27	33	32	45	
	18	43	13	7	21	17	37	24	2	9						26	32	31	44	
	17	42	12	6	20	16	36	23	1	8						25	31	30	43	
	16	41	11	5	19	15	35	22		7						24	30	29	42	
	15	40	10	4	18	14	34	21		6						23	29	28	41	
	14	39	9	3	17	13	33	20		5						22	28	27	40	
	13	38	8	2	16	12	32	19		4						21	27	26	39	
	12	37	7	1	15	11	31	18		3						20	26	25	38	
	11	36	6		14	10	30	17		2						19	25	24	37	
	10	35	5		13	9	29	16		1						18	24	23	36	
	9	34	4		12	8	28	15								17	23	22	35	
	8	33	3		11	7	27	14								16	22	21	34	
	7	32	2		10	6	26	13								15	21	20	33	
	6	31	1		9	5	25	12								14	20	19	32	
	5	30			8	4	24	11								13	19	18	31	
	4	29			7	3	23	10								12	18	17	30	
	3	28			6	2	22	9								11	17	16	29	
	2	27			5	1	21	8								10	16	15	28	
	1	26			4		20	7								9	15	14	27	
	0	25			3		19	6								8	14	13	26	
		24			2		18	5								7	13	12	25	
		23			1		17	4								6	12	11	24	
		22					16	3								5	11	10	23	
		21					15	2								4	10	9	22	
		20					14	1								3	9	8	21	
		19					13									2	8	7	20	
		18					12									1	7	6	19	
		17					11									0	6	5	18	
		16					10										5	4	17	17
		15					9										4	3	16	16
		14					8										3	2	15	15
		13					7										2	1	14	14
		12					6										1	0	13	13
		11					5										0		12	12
		10					4												11	11
		9					3												10	10
		8					2												9	9
		7					1												8	8
		6																	7	7
		5																	6	6
		4																	5	5
		3																	4	4
		2																	3	3
		1																	2	2
		0																	1	1
																			0	0

Your INTEREST PROFILE

Your profile on the *Kuder Preference Record—Vocational* tells you about your interests. You probably know something already about what you like and dislike, but your profile measures your interests in ten important areas and shows how you compare with other people. It, therefore, can help you understand yourself better and plan your future more wisely.

Your profile gives you a picture of your interest in the ten areas listed across the top of the profile. The lines drawn on the profile show your scores.

This is what the *ups and downs* on the profile mean:

If your score is *above* the top dotted line, it is a high score and shows that you like activities in that area.

If your score is *between* the two dotted lines, your interest is about average.

If your score is *below* the bottom dotted line, it is a low score and shows that you dislike activities in that area.

Like most people, you are probably high in some areas of interest. First look at your highest score. This score shows the area of activities that you probably like best. If you have more than one score above the top dotted line, it shows that you have a combination of high interests.

Look at your low scores, too. They should be considered because they indicate the kinds of activities you probably do not enjoy.

Remember that high interest scores are not better or worse than low scores, nor are some interests better than others. Your own pattern of interests is the important thing.

Here is what your scores on the *Preference Record* mean:

OUTDOOR interest means that you prefer work that keeps you outside most of the time and usually deals with animals and growing things. Forest rangers, naturalists, and farmers are among those high in outdoor interests.

MECHANICAL interest means you like to work with machines and tools. Jobs in this area include automobile repairmen, watchmakers, drill press operators, and engineers.

COMPUTATIONAL interest means you like to work with numbers. A high score in this area suggests that you might like such jobs as bookkeeper, accountant, or bank teller.

SCIENTIFIC interest means that you like to discover new facts and solve problems. Doctors, chemists, nurses, engineers, radio repairmen, aviators, and dieticians usually have high scientific interests.

PERSUASIVE interest means that you like to meet and deal with people and to promote projects or things to sell. Most actors, politicians, radio announcers, ministers, salesmen, and store clerks have high persuasive interests.

ARTISTIC interest means you like to do creative work with your hands. It is usually work that has "eye appeal" involving attractive design, color, and materials. Painters, sculptors, architects, dress designers, hairdressers, and interior decorators all do "artistic" work.

LITERARY interest shows that you like to read and write. Literary jobs include novelist, historian, teacher, actor, news reporter, editor, drama critic, and book reviewer.

MUSICAL interest shows you like going to concerts, playing instruments, singing, or reading about music and musicians.

SOCIAL SERVICE interest indicates a preference for helping people. Nurses, Boy or Girl Scout leaders, vocational counselors, tutors, ministers, personnel workers, social workers, and hospital attendants spend much of their time helping other people.

CLERICAL interest means you like office work that requires precision and accuracy. Jobs such as bookkeeper, accountant, file clerk, salesclerk, secretary, statistician, and traffic manager fall in this area.

Your scores in these interest areas give you clues to your vocational likes and dislikes. The occupations named in each area are only examples. There are many others. You will also find that many school courses and leisure-time activities fit into your high interest areas.

Often a certain combination of interests points to occupations and school courses that you will want to consider particularly. For help in getting the most out of your profile, consult your vocational counselor.

Interest is important, but there are other things to consider, too. What you can do well depends on a lot of things in addition to interest—particularly your abilities. Try to get *all* the information you can. The more you know about yourself, the more opportunity you have to make wise plans for your future.

