A Study Concerning Adolescent Leadership

Richard G. Thomas

Municipal University of Omaha

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A STUDY CONCERNING ADOLESCENT LEADERSHIP

A Thesis
Presented to
The Faculty of the Department of Psychology
Municipal University of Omaha

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

By
Richard G. Thomas
ACKNOWLEDGMENTS

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R. G. T.
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HISTORY OF THE PROBLEM

The world has long been faced with the problem of leadership. In almost every group endeavor, a leader is needed. It is said that in both World War I and World War II, many thousands of dollars were wasted upon men, trained to be combat officers, who, completing their training, were found inefficient because they lacked the ability to lead others.

The investigator was first confronted with the problem of determining and selecting leaders when it became necessary to select a quarterback or signal caller for a football team. After much casting about, the best available method was suggested by an experienced coach. This method consisted of consulting school records and choosing the boy with the highest academic record. In this case, it was found that the
boy was an isolate, rejected by the group he attempted to enter.

An effort was then made to find, and make use of, any material that might bear upon the determining of leaders compared with isolates.

There seemed to be no inventories of leadership on the general test market, and only a few attempts at measurement reported, a great number of them being in the army and in business.

Jennings, in Leadership and Isolation¹, reported the use of a sociometric test. In this study, she used the inmates of the New York State Training School for Girls as subjects.² In this study, she termed the girls chosen most often leaders, and those chosen least often and rejected as isolates.³

She makes these statements, defining leadership:

".......Individuals who are isolated from choice by other members for them show in the trends of their behavior tendencies to conduct themselves in ways which imply a marked lack of orientation on their part to the elements of the total group situation; frequently they not only fail to contribute constructively to the group but hinder by their behavior the activities undertaken by other members. Especially by their "externalizing" of private feelings of irritability and the like they subtract from rather than add to the general tone of the social milieu about them.

"Individuals who are over-chosen by the expression of choice from other members for them show, in the trends of their behavior, tendencies to conduct themselves in ways which

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¹ Helen H. Jennings, Leadership and Isolation.
³ Ibid., Ch. IX.
imply an unusual sensitivity and orientation on their part to the elements of the total group situation; to a very much greater extent than the average member, they constructively contribute to enlarge the social field for participation of other citizens, to encourage the development of individual members, to make possible a wider, richer common experience for all by their innovations altering the status quo of things as they find them; they are thus creative improvers of others' situations as well as their own and in exercising such leadership are at the same time chosen as the most wanted associates by the membership. Especially by their "internalizing" of private worries, anxieties, and the like, and by their public display of high esprit de corps they enhance the general tone of the social milieu about them.

"Choice appears as an expression which is not only a response of attraction towards an individual but a response which may, in a sense, be considered "earned" by the person chosen. The isolates are individuals who in a community numbering about four-and-one-half hundred persons do not actively "win" the attraction of any other members to them; conversely, the leaders are individuals who in the same community are eminently successful in "winning" the attraction of other members to them.

"It might be conjectured that individuals who are "sent" into isolation or "elevated" to leadership respectively by the membership of the community as a whole might in each instance be found to resemble one another as a group in their respective personality attributes; the findings, however, reveal both isolates as individuals and leaders as individuals not only to resemble but to differ markedly in personality from one another as they vary from each other respectively as a group. While many points of overlapping appear in the personalities of leaders as individuals, and similarly, for isolates as individuals, real differences in personality also appear to characterize the members of either group respectively as persons."

Stogdill, in his review of previous studies of leadership, lists these primary methods which have been employed for the identification and study of the personal characteristics of leaders; (a) observation of behavior in group situations;

(b) choice of associates (voting); (c) nomination or voting by
qualified observers; (d) selection (and rating or testing) of
persons occupying positions of leadership; and, (e) analysis of
biographical and case history data. 5

In Assessment of Men, 6 several situational measurements were
were set up, all of which were evaluated by trained personnel. They
consisted, for the most part, of problem situations such as moving a
tag across an unabridged stream. These problems required group act-
ivity in their solution. At times leaders were appointed, while in
different situations, the group was left to elect or choose its own
leader. By these two methods a practical observational situation
seemed to result.

Helen F. Stray 7 attached the problem in a slightly different
manner. In a summer girls' camp, she and her assistants determined
the leaders by observation and attempted to show that leaders possessed
in that situation, a greater amount of thirteen personality traits or
characteristics than did non-leaders.

The thirteen traits she used in this study were defined as:

"(a) Health and Vitality; never tired or ill, always ready
to go. Breeds confidence.
(b) Loyalty, the defense of a policy laid down by a
superior regardless of the leader's own feelings
toward it.
(c) Enthusiasm, becoming excited about new activities;
entering into everything with fun and spirit.
(d) Sportsmanship, keeping the rules without shirking
unpleasant duties, or complaint.
(e) Skill and Versatility, the ability to do many things
well
(f) Organizing ability, the ability to plan constructively.

5. Ralph W. Stogdill, "Personal Factors Associated With Leadership;"
6. Assessment of Men: The OSS Assessment Staff.
7. Helen F. Stray, "Leadership Traits of Girls in Girls' Camps;"
Sociology and Social Research. 18:241-250, 1934.
(g) Tact and Sympathy, the ability to prevent dissention and quarrels among the group.
(h) Imagination, the ability to see things before they exist.
(i) Humor, the ability to see the funny side even when they run counter to desire.
(j) Initiative, the ability to plan and carry out the plan.
(k) Poise, the ability to respond graciously to any situation.
(l) Originality, the act of being different.
(m) Sympathy, the ability to listen to others' troubles.

Stray found leaders to possess these traits above listed to a more marked degree than the non-leaders.

Stogdill\textsuperscript{8} reported: (a) The average person who occupies a position of leadership exceeds the average member of his group in the following respects: (1) Intelligence, (2) scholarship, (3) dependability in exercising responsibilities, (4) activity and social participation, and (5) socio-economic status. He further reports that findings suggest leadership is not a matter of passive status, or of the mere possession of some combination of traits. It appears to be a working relationship among members of a group, in which the leader acquires status through active participation and demonstration of his capacity for carrying cooperative tasks through to completion. Significant aspects of this capacity for organizing and expediting cooperative effort appear to be intelligence.

\textsuperscript{8} Ralph M. Stogdill, \textit{op. cit.}, p. 70.
alertness to the needs and motives of others, and insight into situations, further reinforced by such habits as responsibility, initiative, persistence and self-confidence.

Pressey summarizes a leader in this manner:

"He has interests common to the group and is very much of the group, not apart from it or too markedly superior to it. He is above the average in certain traits which the group regards highly; among boys, the leader is more active and successful in games; among the girls, more friendly and able in girls' undertakings. In either sex, the leader is characterized by initiative and fertility of ideas - suggests things to do and gets things going."

In Assessment of Men, the authors state:

"There was nothing novel in our conception of leadership. We thought of it as a man's ability to take the initiative in social situations, to plan and organize action, and in so doing, evoke cooperation."

Bogardus defines leadership in a more social manner:

"A leader is a person who exerts special influence over a number of people. Every one exercises special influence over at least a few other persons, but we cannot say that such activity is leadership. There must be both special influence and numbers of people involved.

"Leadership is personality in action under group conditions. It includes dominant personality traits of one person and receptive personality traits of many persons. It is interaction between specific traits of one person and other traits of the many, in such a way that the course of action of the many is changed by the one.

"Every person not only has leadership traits but also has what may be called followership traits. In fact, personality may be divided into leadership and followership. The dividing line between these two kinds of traits, however, is neither clearcut nor stationary. In fact, what are leadership traits in one social situation may be followership traits"


10. op. cit., p. 301.

11. Emory S. Bogardus, Leaders and Leadership, p. 3.
in another. In general we may say that the more active physical and mental phases of personality comprise one's stock of leadership traits and that the less active are followership qualities.

"Leadership bears a vital relationship in individuality and its complementary element, sociality. If individuality refers to those distinguishing traits which set one person off from another, then sociality is composed of those behavior traits which identify one person with another."

Spaulding, in a study of junior college leaders, reported five types. The study was conducted at the Long Beach Junior College, and the leaders were chosen by selection and ratings of the students. The five types reported were:

(a) the Social Climber had a rationalized desire to "get somewhere" and "be somebody;"
(b) the Intellectual Success was outstanding in debate or some other activity. His prestige was based on his ability and not his desire to get somewhere or be somebody;
(c) the Good-fellow whose desire to be with other people urged him into a diversified program where he became allied with kindred spirits. Thus, this type set up a rather intimate circle with which he maintained much social control;
(d) The Big Athlete was motivated by an interest in athletics and achieved success by others' recognition of his prowess. His prestige was created by his ability and participation in sports;
(e) the athletic activity type used his athletic ability as a stepping-stone to other fields. His constant emphasis upon

athletics and athletic abilities bolstered his importance in other activities. He did not have direct leadership, but more likely, held some official or executive post.

Bogardus breaks the types of leadership down in a different way, listing and defining them in this manner:

"Direct and Indirect. Direct leadership deals with people rather than with things. It appears in person, and it makes pleas or requests or gives orders. It leads by word of mouth. It can be seen or heard or both. It outlines patterns of behavior and commands acceptance. It receives hurrahs or hisses—perhaps both on the same occasion.

"Leadership is indirect when it sets in motion forces that sooner or later change the currents of human activity."

"Partisan and Scientific Leaders. A partisan leader acts in behalf of something or somebody. Every cause has its leader, and every champion is a partisan. Partisan leadership magnifies the strong points and minimizes the weak points of its own side. It is often the embodiment of wishful thinking, tending toward a one-sided presentation. When a leader advocates a certain plan, it is important to know whom or what he represents.

"The scientific leader has an eye single to truth. He is committed to give up his ideas, pet beliefs, and interests if new evidence makes them dubious. He worships at the shrine of truth, not of self or of special interests or of fancy. He defends nothing but the truth. He is a judge rather than an advocate."

"Social, Executive, and Mental Leadership. The social leader is one who performs before groups. He ranges from the college "yell" leader and the community sing leader to the teacher and the preacher. Mental ability and agility are required; personal magnetism counts. Social leadership is almost synonymous with direct leadership. The social leader is a master in maintaining attention, in arousing enthusiasm, and in creating inspiration. He may build up for himself a hero role, "play to the gallery," and live on the admiring glances of his followers."

14. Ibid., p. 16.
15. Ibid., p. 17-18.
"By contrast the mental leader does his best work in seclusion. Social leadership is most inspired in the presence of enthusiastic followers. The mental leader turns aside for reflection. Quiet is essential to his development. Ideas are his chief product, but they must be practical ideas, that is, they must satisfy some of the deeper wants of life if they are to maintain him in his position as a leader.

"The executive leader possesses characteristics of both social and mental leaders. He must work with people, and he must have new ideas. Like the social leader, he must be a man of the hour. Unlike the mental leader, who usually has ample time, he must make important decisions on short notice. The executive wields the power of organization."16

"Autocratic, Paternalistic, and Domestic Leadership..... Autocratic leadership rules persons without consulting them. It wields an iron club. It leads in terms of its own wishes, wants, desires; it molds the actions of others to suit its own plans.

"Autocratic leadership may use dominating methods or it may be bent on attaining goals where it can dominate. Pure autocracy uses dominating methods in attaining a goal of dominance.

..."The autocratic leader is objective, overt, positive. He knows what ought to be done, what he wants to do, and he drives ahead to that end. He proceeds aggressively and obtrusively. He commands and organizes. He captivates and paralyzes."

"Paternalistic leadership is perhaps the most common. It is fatherlike, considering the welfare of the group members. It may overrule the wishes of the group if these seem ill-advised. If mistakes are made by the group, the paternalistic leader must assume responsibility. Hence, he does his best to safeguard his group from blundering by making the final choices himself.

"Democratic leadership grows out of the needs of the group. It seeks to define these needs and to stimulate the members to secure adequate satisfactions. The democratic leader draws people up to their best levels rather
rather than driving them on in line with his own purposes. He trains persons to become leaders, to take his place, and even to surpass him.”

"Prophet, Saint, Expert, Boss... The prophet is a spokesman. He is a representative of authority, and he speaks as one having authority. In religion he is a spokesman of God and hence is "inspired." He has special insight as to what is going on in the world.

"The saint is the exemplification of "soulful goodness." He leads because he lives a holy life.

"The expert represents the highest degree of specialization. He leads because he has more knowledge or skill than any one else in a particular field.

"The boss is an extrovertive person, a "hail-fellow-well-met," a shrewd master who plays upon human feelings. He ranges from the coarse, crude autocrat in a factory to the suave politician.”

Bogardus indicated that another significant breakdown of leadership types was: (a) reactionary; (b) conservative; (c) compromising; (d) liberal; and (e) radical.

A study that was quite similar to that conducted by Stray was that of Drake. In this study, a seven point rating scale was given to twenty-one college girls who were instructed to select five girl friends and rate them on all thirty personality traits listed on the form. A correlation of all traits with leadership was made. There

17. Ibid., pp. 20-23.
19. Ibid., p. 27.
were then compared with a similar test on boys reported by Webb. In this test, he had the proctors rate boys in an English boys' school on forty-five traits.

In comparison, it was found that in only four traits were there differences great enough to be significant. These were Self-confidence, Sociability, Intelligence, and Desire to Impose Will.

In one study Drake states that Originality, Aggressiveness, Common Sense, Cheerfulness, Humor, Emotional Stability, Trustworthiness, Tact, Persistence, and Desire to Excel are traits which correlated positively with leadership.

In general, there is a high degree of trait consistency in leadership even for dissimilar groups. This would agree for the reality of the trait concept. Leadership depends upon internal personal factors and is not entirely the result of environmental needs or "field forces."

However, no indication was made as to how the leaders were chosen, nor were they defined.

A study following the same pattern, but using a questionnaire or sociograph technique, was reported by Partridge. In that study, an attempt was made to set up (a) a valid method of selecting leaders; (b) a census of the personality and ability of leaders; and, (c) a means of observing the leaders in action and of measuring their influence on the group.

Partridge defined leadership by saying:

“If the ability for leadership exists in varying amounts among individuals, one important evidence of this capacity must be the ability to inspire confidence in others, manifested by their willingness to follow. Leadership is more than popularity. It must involve the confidence of more than one person at a time, and it must be a lasting confidence which lasts longer than an hour or a week. If there is such a thing as ability for leadership, continued group activity should bring it into light. Constant social interaction within the same group, especially if the group is not too large, should soon cause the leaders to fall into positions in which they are charged with the responsibility of leading, either formally or informally.”

The subjects were not aware of an experiment being conducted. The boys (ranging in age from twelve to seventeen) were grouped by chance. They were then asked to select a leader by secret vote. This was done four nights. The scores were figured on percentages. From these percentages, the boys were ranked from one to twenty-seven.

They were then given a questionnaire constructed in this manner:

“If you could have your pick of all the boys in the troupe for a patrol leader, whom would you choose?

First Choice ________________
Second Choice ________________
Third Choice ________________.”

These questionnaires were then scored, giving three points for first, two for second, and one for third choice.

A rank correlation was then found, using the two sets of data. It was reported .787. Then, the two ranks were combined and the resulting score for each individual determined his leadership ability.
Partridge reported a Pearson Product Moment r. of .48 between age and leadership and .767 between scores on the Army Alpha and leadership.

That investigator felt that there was a remarkable correlation between intelligence and leadership, and felt that the older boys were chosen because they were more intelligent. In the conclusion, it is stated that the score on the Army Alpha Test seems to be the most important predictive instrument of popularity as a leader.

Murphy and Newcomb made several pertinent remarks about leadership. Some of them are:

"...Leadership is seen to be largely a question of the enjoyment of a key position in a group. Frequently, the actual leader is not the star, the center of the network of positive tele, but an individual enjoying closeness to the person thus favorably placed. A person who has the ear of the key person may thus become the "power behind the throne," the invisible director of social change."

"...Leadership may be highly generalized or highly specific, depending upon the age and interests of the group, how well they know one another, and so on."

Symonds reports an introspective trait rating-scale devised by Sweet. This scale, administered to adolescent boys, was constructed in such a manner that three responses were made to each question. These responses were: "How I Feel," "How Most Boys Feel," "How I Think I Ought to Feel."

Under each of these headings, four responses—"Dislike,

23. Gardner Murphy, Lois B. Murphy, and Theodore M. Newcomb, Experimental Social Psychology; p. 309.

24. Percival M. Symonds, Diagnosing Personality and Conduct
"Rather Not," "Like Some," and "Like a Lot"—were listed. This test was scored in seven ways, yielding scores called (a) "Self Criticism," (b) "Criticism of the Average Boy," (c) "Feeling of Difference From the Average Boy," (d) "Feeling of Superiority," (e) "Feeling of Inferiority," (f) "Deviation from Accepted Ideas of Right," and (g) "Social Insight."

He obtained a high degree of reliability on this test, ranging from .785 for Inferiority to .939 for Criticism of Others.

Thorpe, in describing the relative nature of personality traits, makes these remarks:

"In our thinking about the evaluation of personality traits—of any variety and no matter how defined—we must always remember that in the nature of the case they do not and cannot enjoy any standard objective status. A man's personality qualities (traits) are always evaluated by another whose own personal sense of values constitutes the criterion of judgment. Thus, judgments of the ratings accorded one individual's traits are relative to the subjective standards held by those issuing the judgments."

Werner Wolff evaluated the usage of the word "trait" in this manner:

"Wide as is the value of a personality trait, the evaluation of this trait by the observer may vary as widely. The trait depends on his evaluation system, the way in which he evaluates different traits, e.g., whether he gives a behavioristic description or an analytic interpretation. The value of the trait depends on the method by which it is evoked and tested. When we use apparatus, questionnaires, or behavior observations, we are working with contrasting methods, and the degree of reliability of the scale applied may differ according to the needs of each method."


Murphy and Newcomb define a "trait" as a "name for a certain kind of response manifested in a particular kind of situation."

Cattell, in his *Description and Measurement of Personality*, discussed "traits" to some length. Some of his more pertinent observations were:

"By the...trait method of describing personality, one picks out a certain mode of behavior and defines this behavior as the expression of a trait. It may be a common trait—i.e., something which all people possess to some extent—or it may be entirely peculiar to the individual—i.e., a unique trait. By invoking a comprehensive list of such traits and assigning to the individual a definite amount of each common trait, or a certain possession of unique traits, one describes him."

"A trait, whether unique or common, is a collection of reactions or responses bound by some kind of unity which permits the responses to be gathered under one term and treated in the same fashion for most purposes."

"If we look at a list of...traits—i.e., conscientiousness, courage, tactfulness, the Freudian super ego, "charm," destructiveness, superciliousness, humanitarianism, and selfishness,—we may suspect that some of them are merely social evaluations, or logical or moral categories imposed on functionally disconnected behaviors and present as a unity only in the minds of the spectators. Closer consideration of the situation, however, shows that most of these common verbal unitities are likely to have real unity also. This comes secondarily, by reason of the fact that society which needs the traits it talks about, deliberately molds them in the individual in unitary form."

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22. Murphy, Newcomb, op. cit.

28. Raymond B. Cattell, *Description and Measurement of Personality*.

29. Ibid., p. 13.

30. Ibid., p. 61.

31. Ibid., p. 64.
"Whenever the psychologist describes a function with one noun—i.e., a mental set, reaction time, the super ego, frustration tolerance—he implies that he deals with some kind of unity."

"It is unfortunate that these studies of stylistic—i.e., mainly temperamental—source traits have not been continued into other kinds of factors; but at least it is certain, as we shall see later, that the matching of internal questionnaire factors and external behavior factors is systematically more difficult than those who so confidently predict from questionnaires in guidance and personnel work imagine."

**SUMMARY**

Report has been made of several studies of leadership, conducted in several manners, but no indication has been found of an attempt to evaluate leaders on a self-rating basis.

It has often been tried, with much success, in personality and social maturity scales. One of these studies was that made by Sweet.  

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32. Ibid., p. 72.  
33. Ibid., p. 342.  
THE PROBLEM

The problem was to attempt to find the manner in which leaders would rate themselves on a self-rating inventory in comparison with followers and isolates.

From the report of Jennings\(^1\) and Stogdill,\(^2\) a means of determining leaders by questionnaire or sociograph was suggested.

It was realised that attempts must be made to:
(a) determine leaders by a valid method, (b) construct and administer a self-rating scale, (c) include, insofar as possible, all economic groups.

In the Stogdill report an indication was made that those coming from the better economic levels most often are the outstanding leaders. This lead to the attempt to measure each of the three economic groups: high, middle class, and low.

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The self-rating scale was devised in an attempt to measure the individual subject's feelings about whether or not he possessed a certain trait, and the quantity to which he possessed this trait.
CHAPTER III

MATERIALS AND METHOD

The hypothesis was made that leaders would rate themselves superior to followers, non-leaders, and isolates on a self-rating scale. It was felt that this would be more evident if the questions on the rating scale did not involve direct self-ratings.

The problem was then to determine the leaders, followers, and isolates, and to administer to these groups a self-rating scale which would not call for an obvious answer, but would be, as nearly as possible, disguised.

A sociograph or social questionnaire was employed in an attempt to determine whether or not an individual was a leader or a non-leader.

The sociograph\(^1\) was constructed to measure general leadership. No attempt was made to place any of the leaders in a specific type or section, although it was realized that these types did exist.\(^2\) This questionnaire was constructed by dividing a sheet of paper into three horizontal sections and heading each section with one of these three statements:

(a) "List here the people in your class you like to be around most and tell why."

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1. \textit{Figure I.}, page 1, Appendix

2. \textit{Supra}, pp. 7-11.
(b) "List here the people in your class you do not mind being around."

(c) "List here the people you do not like to be around and give the reason why."

The sections were divided into parts by a vertical line, giving the subjects an area in which to write the students' names and opposite it an area in which to place the reason for the choice they made.

It was considered to possess internal validity as described by Cattell.3

"The essential or internal validation takes a set of laboratory or other measures in a field of responses which is suspected, or common-sense or intuitive grounds, to have a psychological unity and which, usually, has also some claim to be of importance for practical, everyday-life predictions. It validates each test by proving that it belongs to the single functional unity concerned. . . .

"Internal validation means proving that a unitary trait exists to be measured and that the test in question partakes of this trait. It means, further, deciding whether what is common to the elements of the unitary trait is what the experimenter wants to measure."

The "Army Man to Man Rating Scale" developed by Scott4 in 1917 used the same technique, but asked officers' opinions of fellow officers on five traits: Physical Qualities, Intelligence, Leadership, Personal Qualities, and General Value to the Service.

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3. Raymond B. Cattell, Description and Measurement of Personality; p. 583.

Also, Jennings\(^5\) used a form similar to that employed by the experimenter, and indicated its validity in this manner:

"The sociometric test is unlike the usual mental test in that it does not attempt to measure behavior of a certain type by eliciting related responses but employs a sample of the actual behavior studied. As such the sample is directly meaningful and need not be validated by relating it to an external criterion. Hence the mental test concept of validity as correlation with a criterion does not apply here. It may be considered, however, whether a sociometric test is valid in the sense that the behavior which it was intended to elicit actually appeared without falsification of responses on the part of the subjects."

The O S S Staff\(^6\) indicated that they believed the validity of the sociometric questionnaire to depend upon the sincerity of the subject taking it. They made use of it on two occasions for each group of "S" candidates.

On the basis of these authorities, the investigator believed this sociometric questionnaire to have a sufficient amount of validity to warrant its use in the establishment of leaders.

Scoring was done by a method suggested by Hartshorne and May (as reported by Symonds \(^7\)) in which a +1, 0, and -1 were used on a teacher rating-scale for students. Logically, this seems to give only a small spread of differences. A better method would seem to be to assign +3 to the most

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desirable response, +1 the second most desirable, and -3 to the least desirable response, as this would give a greater numerical spread to the scores computed in this manner. This method of scoring was employed on the sociograph. A refinement was that of dividing the final plus or minus score earned by the number of students of the same sex in the classroom, the result being what might be termed a leadership decimal.

At the same time this questionnaire was given, a "trait inventory" was administered. In this so-called Trait Inventory, the subjects were requested to read fifty statements, stated in the first person, and respond to each by checking or marking in one of the three spaces provided. These spaces were entitled at the head of each column, "Never," Sometimes," and "Always."

The statements with only a few exceptions, were taken from The California Test of Personality and The Brown Personality Inventory. They were changed from the third person to the first person. These statements were used to attempt to measure the same traits they were said to measure in the inventories from which they were taken.

An attempt was then made to establish a scoring form which would have a high correlation with the sociograph. This was done by taking the +1 of each group and a like

8. Figure I, page I, Appendix.
9. Figure II, page II, Appendix.
10. Thorpe, Clark, and Tietz, California Test of Personality, California Test Bureau.
number of cases from the lower range. These were recorded and
compared. In the case of the girls, only a very few statements
indicated a difference in response between the high and low groups.

A +1, +2, +3 score was given on each statement in the scoring
procedure used in the boys.\(^2\) The 3 score given in the column in
which leaders or +1 - showed the greatest number of responses, +2
in center group, and +1 in the area where the non-leaders and
isolates scored the greatest frequency of times.

In the key for scoring the girls,\(^3\) a different procedure was
necessary. The scores on each statement made by the +1 and up, and
a like number at the low end compared and only in the areas where the
scores made by one group were twice the number or greater than those
in the other was any score assigned. The score thus assigned was
the number of times that the score in one group exceeded the score
in the other. A minus score indicated that the low group scored the
greatest number of times in an area and a plus score indicated that
the high group, or leaders, scored most often.

A different scoring technique was necessary for the girls
because they appeared to respond to the "Trait Inventory" statements
much differently than the boys. In a large number of the questions,
there was no difference shown between the high and the low groups on
the Sociograph, while every question appeared to be significant in
the scoring of the boys.

Precedent for these two types of scoring was assumed from the
discussion upon the scoring of questionnaires found in Symonds:\(^4\)

12. Figure III, Appendix, page V.
13. Figure IV, Appendix, page VIII.
"Another scoring method consists in trying out the questions first and determining the key from the results. This may be accomplished in two ways. The first of these is to tabulate the responses on two sharply differentiated groups already separated either by social selection or by ratings on the quality of characteristic in question. The other method is first to score the questionnaire, using a common-sense or a priori key, and then to check the answers to each item against high or low total scores on the questionnaire. This can be done in various ways, of which an elaborate one is to compute the bi-serial $r$ for the answers to each item against the distribution of scores. A simpler method is to compute the number of yes answers for sub-groups making above-average scores in the group originally measured. In this case the key should give credit for the answer yes if a larger percentage of high-scoring than low-scoring persons answers it that way. Where the group is large, one may abridge the work by using the upper and lower 25 or 20 percent of the group."

Symonds\textsuperscript{15} reports Strong's attitude toward the more intricate scoring method, i.e., bi-serial $r$ and the method of weighting items developed by Kelley. Strong discovered these methods to correlate almost perfectly (except for extreme values) with those found by merely comparing the differences between percentages of subjects answering the questions correctly. Strong indicated that the items should be weighted by comparison of the responses of the high and low percentages.

The statements in the questionnaire were then grouped according to the trait groupings employed by Stray.\textsuperscript{16} One trait, scholarship, was added by the experimenter. The statements were grouped to indicate the traits, as nearly as the groupings in the "Brown Personality Inventory"\textsuperscript{17} and

\begin{itemize}
  \item \textsuperscript{15} \textit{Ibid.}, p. 160.
  \item \textsuperscript{16} Helen F. Stray, "Leadership Traits of Girls In Girls' Camps;" \textit{Sociology and Social Research}, 18:241-50, 1934.
  \item \textsuperscript{17} \textit{Brown Personality Inventory}, \textit{op. cit.}
\end{itemize}
"The California Test of Personality." Figure V (page XI) shows the statement breakdown into trait indications as used in this study.

Eighth grade students were chosen as subjects because this was the highest grade in the Omaha and Council Bluffs school systems in which groups remained, to some extent, static. The high schools, by reason of their departmental arrangement, do not lend themselves well to this type of study.

The maturity of the eighth grade students was the reason for its selection in preference to a lower grade group. It was felt that a better understanding of the forms used would be had, and fewer errors and omissions would result.

The various schools in the three economic groups were suggested by the officials of the schools. These economic groups, high, middle class, and low, were based principally on the occupations of the fathers in the specific communities.

Two schools were experimented upon in Council Bluffs, and four schools in Omaha.

The form was administered in six schools, two of which had two separate eighth grade rooms; thus, it was given to eight separate groups. Two of these schools were in what was designated as the higher economic area; two in the middle class area; and, two in the lower economic area.

Table I (page 26) shows the six schools chosen, the number of classes in each school, and the number of subjects scored in each class. A few inventories were discarded because the students had failed to follow instructions.

### TABLE I

The schools from which the eighth grade students were chosen for experimentation and the number of students in each school.

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>NUMBER OF CLASSES</th>
<th>NUMBER OF PUPILS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>&quot;A&quot; GROUP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beals</td>
<td>2</td>
<td>31 - 33</td>
</tr>
<tr>
<td>Field Club</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td><strong>&quot;B&quot; GROUP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenue &quot;B&quot;</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>Washington</td>
<td>2</td>
<td>23 - 26</td>
</tr>
<tr>
<td><strong>&quot;C&quot; GROUP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Druid Hill</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Train</td>
<td>1</td>
<td>39</td>
</tr>
</tbody>
</table>

| BOYS         | 120               |
| GIRLS        | 131               |
| TOTAL        | 251               |
At attempt was made to administer the questionnaire as uniformly as possible. Upon entering the room, the experimenter was greeted by the teacher, who then turned the class over to him. She was asked to remain in the room. Preceding the distribution of the questionnaires, a prepared lecture was given:

"I have a questionnaire which I would like to have you take. It is not a test, because there are no right or wrong answers. It is about the people you are around and yourself. The reason you are asked to take it is that it is a part of my school work. I am trying to find out about people; about why one person is liked and another is disliked.

"I want you to know that no one will see these papers but me. Neither your teacher nor your friends will be told what you write. I want you to use your name and the names of your classmates because that is the only way they can be scored. The quizzes cannot be scored unless they have names on them.

The forms were then passed out as rapidly as possible. The investigator demonstrated on a copy of the form as he said:

Let us look at the back, which is the side divided into three parts. Write your name in the correct blank, and the name of your school in the other.

Shall we read what it says? "List here the people in your class you like to be around most and tell why." This does not mean the people outside the class, but only the students in this group.

Let us look at the second section. "List here the people in your class you don't mind being around."

Now, let us go to the last section. "List here the people you do not like to be around and tell why." This does not mean those you are just mad at today, but those you don't ever want to be with.

Shall we turn the papers over? Put your name in the correct place and the name of your school in the other blank. You see that these are statements and that there are three
columns headed NEVER, SOMETIMES, ALWAYS. Put a check mark or "x" in the column that says most nearly the way you feel about the statement. There are no right or wrong answers, so do not be afraid to check the column that is most like the way you feel.

These instructions were used in each situation. It was found that each group completed the inventory within thirty minutes. There was never a suggestion of refusal, but always the subjects, as a group, seemed to enter into the task with much interest and enthusiasm.

As soon as the forms were completed by the students, they were collected, the group and teacher thanked, and the experimenter left the school.

Because it was a group measurement rather than an inventory of an individual, no questions were asked of the teachers or principals, and no school records were consulted.
CHAPTER IV
FINDINGS AND RESULTS

On the sociograph, the reliability coefficient found for the boys was much higher than that found for the girls. Over a five month period, from late October to April, a Spearman Rho coefficient of correlation \( \cdot 82 \) was found in a test, re-test situation, while on a three-day test, retest situation, the coefficient of correlation was found to be \( \cdot 95 \) for the boys.

The girls studied yielded a Spearman Rho coefficient of correlation of \( \cdot 59 \) from a five months test, re-test procedure, and \( \cdot 83 \) over a three day period.

A partial explanation for this discrepancy could be that the girls had not yet begun competitive games in physical education in October. The two girls who were outstanding in games were rated low in October and headed the list in April.

The reliability of the trait inventory was found only once, that over a three day period, by the Spearman Rho formula. It was \( \cdot 94 \) for the boys, and \( \cdot 79 \) for the girls. No explanation is offered for this discrepancy. The group on which the reliabilities were found consisted of forty students, twenty-three girls and seventeen boys.
Several types of scoring were attempted on the "Trait Inventory." It was hoped that a scoring method would be devised which would correlate quite highly with the sociograph. However, no significantly high correlation was found. The studies of both the boys and girls yielded the same Pearson $r$ of $.54$. This established the validity of the "Trait Inventory" score (.54) as it was correlated with the sociograph. The number of boys used in this correlation was 120, and the number of girls, 131.

A frequency curve for each test was then constructed. On the boys, the curves were similar for the "Trait Inventory" and the sociograph. Both appear to be skewed toward the positive, or high, end of the scoring. In the case of the girls, the curves do not appear to be similar.

The Spearman Rho was then taken separately for both sexes in each school. The correlation for the boys ranged from $.73$ to $.22$. The correlation for the girls ranged from $.73$ to $.14$.

The trait analysis was scored by counting the most acceptable response as $3$, the second most acceptable as $1$, and the least acceptable as $0$. In all but one trait, "enthusiasm," the boys chosen most often on the sociograph seemed to
feel themselves to have a higher quality of the trait, the
greatest differences being in "sportsmanship" and "initiative,"
Graph I (page 32). "Poise" and "enthusiasm" were the two in
which there were the least differences. The differences were
calculated in percent.

The girls chosen most often on the sociograph led those
chosen least often in all traits, Graph II (page 33). They
seemed to feel themselves to be superior in "loyalty" and
"sympathy." The least differences appeared in "skill and
versatility" and "sportsmanship." The percentage of differ-
ences between the high and low girls were consistently larger
than that found between the two groups of boys.

An analysis of the students' reason for liking and dis-
liking individuals was then made. When the reasons were
comparable to the traits used in Stray's study, they were
classified under the headings found in that study; but when
there seemed to be little or no similarity, the trait or
reason was listed as the student had listed it.

The boys reported twenty-four reasons for choosing an
individual and twenty-two reasons for rejecting an individual.
The reason most often listed for acceptance was "personality,"
and the one most often listed for rejection was "childishness."
Graph III (page 34) shows all of the reasons given by the
boys and indicates the number of times each reason was given.

6. Helen Stray, "Leadership Traits of Girls in Girls Camps";
Sociology and Social Research, 18:241-250, 1934.
<table>
<thead>
<tr>
<th>Trait</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiasm</td>
<td>61%</td>
</tr>
<tr>
<td>Loyalty</td>
<td>66%</td>
</tr>
<tr>
<td>Health and Vitality</td>
<td>39%</td>
</tr>
<tr>
<td>Imagination</td>
<td>47%</td>
</tr>
<tr>
<td>Initiative</td>
<td>50%</td>
</tr>
<tr>
<td>Originality</td>
<td>56%</td>
</tr>
<tr>
<td>Organizing Ability</td>
<td>57%</td>
</tr>
<tr>
<td>Poise</td>
<td>68%</td>
</tr>
<tr>
<td>Humor</td>
<td>52%</td>
</tr>
<tr>
<td>Scholarship</td>
<td>74%</td>
</tr>
<tr>
<td>Skill and Versatility</td>
<td>58%</td>
</tr>
<tr>
<td>Sportsmanship</td>
<td>66%</td>
</tr>
<tr>
<td>Sympathy</td>
<td>73%</td>
</tr>
<tr>
<td>tact</td>
<td>54%</td>
</tr>
</tbody>
</table>

Chart showing the percentage differences in self-rating on the trait inventory on the high 15 boys compared with the low 15 boys on the sociogram.
Graph III - Boys

Reasons listed for acceptance of the boys in the high group. Each square equals one mention of that particular trait or quality.
GRAPH IV - GIRLS

REASONS LISTED FOR ACCEPTANCE
OF THE GIRLS IN THE HIGH GROUP.
EACH SQUARE EQUALS ONE MENTION
OF THAT PARTICULAR TRAIT OR
QUALITY.

REASONS LISTED FOR REJECTION
OF THE GIRLS IN THE LOW GROUP.
EACH SQUARE EQUALS ONE MENTION
OF THAT PARTICULAR TRAIT OR
QUALITY.

PERSONALITY
INDEX
DULLNESS
IS FUN

CHEERFULNESS
HUMOROUS
SPORTSMANSHIP
SANE INTERESTS
GOOD MAVERERS
CLEANNESS
SYMPATHY
INTELLIGENCE
SOLI.VARIATION
HELPFULNESS
TACTFULNESS
ENTHUSIASM
TRUSTWORTHINESS
INITIATIVE
PRETTINESS

SNOBISHNESS
DRAG
BOSSINESS
POOR SPORT
DISCOVETY
SILLINESS
TAMBOY
ACTS OLD
QUEER
B.O.
BUT CRAZY
IMPOLITE
CRACKY
NO PERSONALITY
IRDIE
GOSSIP
DUMB
UNTOUCHED
STINGINESS
I HATE HER
Graph IV (page 35) shows the girls' reasons for choosing or rejecting individuals. As in the boys, "personality" is high, but different from the boys, "snobbishness" in the reason most often given for rejection. The girls listed eighteen reasons for acceptance and twenty reasons for rejection.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

(1) There appeared to be a sex difference at this age level.

(2) The better leaders appeared to come from the high economic group; the poorer leaders from the low economic group.

(3) Those who were in the high economic group felt themselves superior in all traits.

(4) The leaders felt themselves superior to the non-leaders and isolates with one exception; the non-leaders and isolate boys felt themselves superior in enthusiasm.

(5) In its present form, the "Trait Inventory" does not seem to be an adequate measurement of leadership. A Pearson Product Moment correlation of +.54 was found between the Sociograph and the "Trait Inventory."1

(6) This study is compatible with that of Stray.2 In all traits measured by Stray's study, the leaders exceeded the non-leaders and isolates. A different means of determining leaders was utilized in this study (the Sociograph) and a different attempt made to measure traits (the "Trait Inventory").

In Stray's study, observation alone was used.

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1. Although this correlation is 16 percent above chance when calculated by the Kelly Coefficient of Alienation, it is not significantly high.

(7) The subject’s reasons for accepting or rejecting an individual seemingly did not aid in the study. For the most part, they were fragmentary and juvenile. This seems to indicate that they are not able to make an accurate determination of their reasons for accepting or rejecting an individual.

It would be well to determine, by question analysis, the value of each statement in the "Trait Inventory." This inventory could be improved by omitting the statements which do not have a significantly high difference between the high and low groups. Several statements could be improved by better wording. New questions could be added to determine, in a better manner, the traits involved.

It does not appear with any degree of certainty that the traits mentioned are measured. A determination of whether or not this is true should be made.

The Sociograph should be analyzed. An objective means of determining its validity should be employed.

Observations of those who scored high and low should be made to determine the accuracy of the testing tools utilized.

An attempt must be made in all studies of this nature to make them statistically meaningful. In so many of the cases reported, this point is ignored.

It would be well if some effort were made to standardize the definitions of the various "traits." As the situation is now, an experimenter is not certain that the right definition of a trait has been chosen for his study.
**FIGURE I**

**PEOPLE I LIKE TO ASSOCIATE WITH**

The SOCIOGRAPH, showing the scoring method applied.

<table>
<thead>
<tr>
<th>NAME</th>
<th>SCHOOL</th>
</tr>
</thead>
</table>

List here the people in your class you like to be around most and tell why.

<table>
<thead>
<tr>
<th>Name</th>
<th>Why</th>
</tr>
</thead>
</table>

43 each time an individual's name appeared in this column.

List here the people in your class you don't mind being around.

<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
</table>

41 each time an individual's name appeared in this column.

List here the people you do not like to be around and give the reasons why.

<table>
<thead>
<tr>
<th>Name</th>
<th>Why</th>
</tr>
</thead>
</table>

-3 each time an individual's name appeared in this column.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>NEVER</th>
<th>SOMETIMES</th>
<th>ALWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I do all I can to make my school better than other schools.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I expect to succeed in the things I do.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>When people talk against the Government, I get mad.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>It is easy for me to get up in the mornings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I ask questions or give answers in school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>When someone suggests something new to do, I want to try it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>It is fun just to sit and think of things that might happen to me when I get out of school.</td>
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<td></td>
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</tr>
<tr>
<td>8.</td>
<td>When I go to a party, I try to keep in the background.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>When there is nothing to do I can think of something.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I make a good captain for a game.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I can influence other people successfully.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I like school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I can do things better than most people.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I care to take a prominent part in social affairs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>School work is too hard for me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I would like to quit school and go to work.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NEVER</td>
<td>SOMETIMES</td>
<td>ALWAYS</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------</td>
<td>----------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>17. I stay out of games because I might lose if I play.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I become angry when people tease me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I try to cover up my poor opinion or pity of a person so he won't know how I feel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. My friends come to me with their troubles.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. My classmates are superior to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I waste much time when I should be getting my lessons.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. The subjects in school are so dull they do not interest me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I hurt my playmates' feelings on purpose.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. When someone tells me to do something, I do just the opposite.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. When things go wrong, I can find something to laugh at.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. I try to get even with people who are unjust.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. People provoke me until I feel like swearing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I am self-conscious when I have to recite in front of a group.</td>
<td></td>
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**SCORING KEY USED ON GIRLS**

**TRAIT INVENTORY**

**FORM 1**

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FIGURE V

THE BREAKDOWN OF STATEMENTS INTO

TRAIT INDICATING GROUPS.

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FIGURE V, continued

"TRAITS INVENTORY STATEMENT NO.

SCHOLARSHIP

12. I like school.
13. School work is too hard for me.
14. I would like to quit school and go to work.
21. Most of my classmates are superior to me.
24. The subjects in school are so dull they do not interest me.

SKILL AND VERSATILITY

11. I can influence other people successfully.
13. I can do many things better than most people can.

SPORTSMANSHIP

17. I stay out of games because I might lose if I play.
18. I become angry when people tease me.
26. When someone tells me to do something, I do just the opposite.
28. I try to get even with people who are unjust.
44. People in my home are jealous.

SYMPATHY

20. My friends come to me with their troubles.
48. I give money to charities and help in their drives because I think they help other people.

TACT

19. I try to cover up my poor opinion or pity of a person so he won't know how I feel.
25. I hurt my playmates' feelings on purpose.
43. When I am in a group of people my own age, it is hard to find something to talk about.
46. When I see something nice about a person's clothes, I tell him (or her).
FIGURE VI

PEARSON PRODUCT MOMENT CORRELATION BETWEEN THE SOCIOGRAM AND THE TRAIT INVENTORY; BOYS TOTAL NUMBER 120.

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<th>fd²</th>
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\[ r = \frac{\sum xy}{n} \]

\[ n = 2.608 \]

\[ xy = 513 \]

\[ r = .34 \]

\[ c_x = \frac{\sum x^2}{120} = .217 \]

\[ c_y = \frac{\sum (y - \bar{y})^2}{120} = .241 \]

\[ c_x c_y = -.053 \]

\[ s^2_x = \frac{\sum (x - \bar{x})^2}{120} = 4.693 \]

\[ x = 2.166 \]

\[ s^2_y = \frac{\sum (y - \bar{y})^2}{120} = 5.208 \]

\[ y = 2.280 \]
### FIGURE VII

**PEARSON PRODUCT MOMENT CORRELATION BETWEEN THE SOCIOGRAM AND THE TRAIT INVENTORY; GIRLS TOTAL NUMBER 131.**

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\[ r = \frac{\sum xy}{n} \]

\[ c_x = \frac{73 - 125}{131} = -0.351 \]

\[ c_y = \frac{215 - 120}{131} = 0.800 \]

\[ c_x c_y = -0.281 \]

\[ \sum x = 1.91 \]

\[ s_x^2 = \frac{16}{131} = 5.372 \]

\[ \sum y = 3.44 \]

\[ s_y^2 = \frac{1489}{131} = 11.837 \]

\[ r = 0.54 \]
FIGURE VIII

Frequency curve showing: A, boys' scores on Sociogram; and, B, boys' scores on Trait Inventory. Each square equals one case.

N = 120
FREQUENCY CURVE SHOWING: A. GIRLS’ SCORES ON SQUIGGRAPH; AND,
B. GIRLS’ SCORES ON TRAIT INVENTORY. EACH SQUARE EQUALS ONE CASE.

N = 131
FIGURE X
CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHISH" AND "TRAIT INVENTORY"
IN SCHOOL A-I, BOYS

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N = 16
\[ \bar{D}^2 = 290.5 \]

\[ p = \frac{1 - \frac{6 \bar{D}^2}{N(N^2 - 1)}}{1 - \frac{2\bar{D}^2}{N(N^2 - 1)}} = 1 - \frac{1743}{4080} = 1 - .43 = .57. \]
FIGURE X, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION

BETWEEN "SOCIOGRAPH" AND "TRAIT INVENTORY"

IN SCHOOL A-II, BOYS

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\[ N = 14 \]

\[ \sum D^2 = 199.5 \]

\[ p = 1 - \frac{64}{14(14^2 - 1)} = 1 - \frac{64}{199.5} = 1 - 0.32 = 0.67. \]
FIGURE X. continued

CHART SHOWING THE SPEARMAN RHO CORRELATION

BETWEEN "SOCIOPHAG" AND "TRAIT INVENTORY"

IN SCHOOL A-III, BOYS

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\[ N = 13 \]
\[ \sum D^2 = 112. \]
\[ p = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 112}{13(13^2-1)} = 1 - \frac{672}{2184} = 1 - .31 = .69. \]
**FIGURE X, continued**

**CHART SHOWING THE SPEARMAN RHO CORRELATION**

**BETWEEN "SOCIOPHAGH" AND "TRAIT INVENTORY"**

**IN SCHOOL B-I, BOYS**

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\[ \bar{D}^2 = 1455.5 \]

\[
p = 1 - \frac{6 \times \bar{D}^2}{N(N^2 - 1)} = 1 - \frac{6 \times 1455.5}{25(25^2 - 1)} = 1 - \frac{8733}{15700} = 1 - .56 = .44.\]
**Figure X, continued**

Chart showing the Spearman Rho correlation between "Sociograph" and "Trait Inventory" in school R-II? boys

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\[ N = 11 \]

\[ \pm D^2 = 71 \]

\[ p = 1 - \frac{6 \pm D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 71}{11(11^2 - 1)} = 1 - \frac{426}{1320} = 1 - .32 = .68. \]
FIGURE X, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHAGH" AND "TRAIT INVENTORY"
IN SCHOOL B-III. BOYS

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\[ N = 16 \]
\[ \frac{1}{N(N^2-1)} = 1 - \frac{6 \times 382}{16(16^2-1)} = 1 - \frac{2282}{4080} = 1 - .56 = .44. \]
FIGURE X, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHAG" AND "TRAIT INVENTORY"
IN SCHOOL C-I, BOYS

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N = 12

p = 1 - \frac{6\sum d^2}{N(N^2-1)} = 1 - \frac{6\times223}{12(12^2-1)} = 1 - \frac{1338}{1716} = 1 - .78 = .22.
FIGURE X, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHRAGH" AND "TRAIT INVENTORY"
IN SCHOOL C-II, BOYS

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\[ N = 13 \]
\[ \sum D^2 = 98 \]

\[ p = 1 - \frac{6.29^2}{N(N^2 - 1)} = 1 - \frac{6.29^2}{13(13^2 - 1)} = 1 - \frac{6.29^2}{2184} = 1 - .27 = .73. \]
**Figure XI.**

Chart showing the Spearman Rho correlation between "Sociograph" and "Trait Inventory" in School A-I, Girls

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\[ N = 17 \]

\[ \sum D^2 = 311.5 \]

\[ p = 1 - \frac{6 \sum D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 311.5}{17(17^2 - 1)} = 1 - \frac{1869}{4896} = .38 \approx .62 \]
FIGURE XI: continued

CHART SHOWING THE SPEARMAN RHO CORRELATION

BETWEEN "SOCIOGRAPH" AND "TRAIT INVENTORY"

IN SCHOOL A-II, GIRLS

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N = 17

\[ z = 182.5 \]

\[ p = 1 - \frac{6 \times 182.5}{17(17^2-1)} = 1 - \frac{1095}{4896} = 1 - .22 = .78 \]
FIGURE XI. continued

CHART SHOWING THE SPEARMAN RHÔ CORRELATION

BETWEEN "SOCIOGRAPH" AND "TRAIT INVENTORY"

IN SCHOOL A-III, GIRLS

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N = 17

\[ \sum D^2 = 287.5 \]

\[ p = 1 - \frac{6 D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 287.5}{17(17^2 - 1)} = 1 - .35 = .65 \]

\[ \frac{N(D^2 - 1)}{17(17^2 - 1)} = 4896 \]
**FIGURE XI, continued**

**CHART SHOWING THE SPEARMAN RHO CORRELATION**

**BETWEEN "SOCIOPHraph" AND "TRAFT INVETNTORY"**

**IN SCHOOL B-I, GIRLS**

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\[ N = 19 \]

\[ 2 \hat{D}^2 = 407.5 \]

\[ p = 1 - \frac{6 \hat{D}^2}{N(N^2-1)} = 1 - \frac{6 \times 407.5}{19(19^2-1)} = 1 - \frac{2445}{6940} = .64 \]
FIGURE XI. continued

CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHRAH" AND "TRAIT INVENTORY"
IN SCHOOL D-XI, GIRLS

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\[ N = 15 \]
\[ \sum D^2 = 186.5 \]
\[ p = 1 - \frac{6\sum D^2}{N(N^2-1)} = 1 - \frac{6\times186.5}{15(15^2-1)} = 1 - \frac{1119}{3360} = 1 - .33 = .67. \]
# FIGURE XI, continued

**Chart showing the Spearman Rho Correlation**

**Between "Sociograph" and "Trait Inventory"**

**In School D-III, Girls**

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\[
\text{N} = 7 \\
\text{<D}^2 = 19.5
\]

\[
p = 1 - \frac{6 \times D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 19.5}{7(7^2 - 1)} = 1 - \frac{117}{336} = 1 - .35 = .65.
\]
FIGURE XI, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION

BETWEEN "SOCIOGRAPH" AND "TRAIT INVENTORY"

IN SCHOOL C-I, GIRLS

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N = 13

\[ \text{\(p = 1 - \frac{6 \times D^2}{N(N-1)} = 1 - \frac{6 \times 210.5}{13(13-1)} = 1 - \frac{1263}{2184} = 0.58 = 0.42.\)}\]
FIGURE XI, continued

CHART SHOWING THE SPEARMAN RHO CORRELATION
BETWEEN "SOCIOPHAGH" AND "TRAIT INVENTORY"
IN SCHOOL C-II, GIRLS

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N = 26
\[ z^2 = 2518.5 \]
\[ p = 1 - \frac{6\cdot z^2}{N(N^2-1)} = 1 - \frac{6\cdot 2518.5}{26(26^2-1)} = 1 - \frac{15111}{17550} = 1 - .86 = .14. \]
BIBLIOGRAPHY


O S S Staff, Assessment of Men.


BIBLIOGRAPHY

(PERIODICALS)


