

SOCIAL LEADERSHIP AS RELATED TO THE MINNESOTA
MULTIPHASIC PERSONALITY INVENTORY

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MULTIPHASIC PERSONALITY INVENTORY

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CHAPTER I

THE PROBLEM

Introduction

Williamson and Hoyt¹ of the University of Minnesota found that students holding certain positions of "formal" leadership differed significantly with respect to personality characteristics from "students in general." The study was concerned particularly with two questions:

1. Are students holding leadership positions of different types significantly different in personality characteristics from student leaders of other types of activities?
2. What personality characteristics differentiate students holding positions of "formal" leadership; i.e., president of a fraternity, president of a religious organization, etc., from "students in general"?

These investigators used as their measure of personality the Minnesota Multiphasic Personality Inventory.² The

¹E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, XII, 65-78.

²Minnesota Multiphasic Personality Inventory hereafter will be referred to as the MMPI.

MMPI is a test of personality standardized on a non-student population of about 700 hospitalized adults and their relatives. This instrument has been employed widely in the counseling of students.

In their study, test scores of student activity leaders of religious organizations, political activities, publications, governing boards, and fraternities were compared with each other and with the test scores of unselected freshmen of the class enrolling at the University of Minnesota in September, 1948. Difficulties were encountered by these investigators in finding a basis for comparing student leaders with students in general because the MMPI had not been given to enough students above freshmen classes to yield a large enough sample of the total college population. Consequently, Williamson and Hoyt used the MMPI test scores of an available 70 per cent of the University of Minnesota freshman class enrolling in September, 1948. These investigators found that student political leaders differed from other types of student leaders on the Psychopathic Deviate (Pd), Paranoia (Pa), and Hypomania (Ma) scales.

These investigators also found that student leaders differed from students in general--in this case unselected freshmen--with respect to a number of measured personality characteristics; that is, men activity leaders holding "top campus positions" scored significantly higher than freshmen on K, Hypochondriasis (Hs), Hysteria (Hy), and

Masculinity-femininity (Mf) scales of the MMPI at the .01 level, and at the .05 level on the Hypomania (Ma) scale.

Statement of the Problem

The purpose of this investigation is to go beyond the work of Williamson and Hoyt with a study of social leadership as related to the MMPI that has a more precise and more rigorous control of variables in an attempt to do the following:

1. Pick, if possible, the individual items on the MMPI which show a significant difference in the responses of male college leaders and non-leaders in order to secure a list of items that may be used in constructing a scale to predict college leadership.
2. Discover which of the designated scales of the MMPI, if any, show a significant difference in the responses of leaders and non-leaders.

Need and Purpose of the Study

Link maintained that "leadership is an aspect of social effectiveness, leaders are not merely born; they are persons who have developed social effectiveness to an unusual degree."³

³Henry C. Link, "The Definition of Social Effectiveness and Leadership Through Measurement," Educational and Psychological Measurement, 1944, IV, 57.

Several inferences may be made on the basis of Link's statement. One inference that may be made is that there is a need to isolate those personality characteristics that make for social effectiveness. A second inference that may be made from Link's statement is that there is need to train people in the skills of leadership. The present study is not concerned with the second inference but is concerned primarily with isolating those personality characteristics that make for social leadership at the college level.

The present investigation, as previously indicated, attempts to go beyond the study of Williamson and Hoyt and in doing this employed a more precise experimental design with the purpose of attempting to understand more fully the personality characteristics which make for social leadership.

Delimitations of the Present Investigation

There have been many studies of leadership relative to various groups in society. This study is limited to social leadership at the college level. In this study, the subjects were sixty-nine leaders and sixty-nine non-leaders. The leaders were sixty-nine male presidents of prominent campus organizations of a social nature. President of fraternity groups, dormitories, religious organizations, social organizations, campus political organizations, and

athletic organizations at Oklahoma A. and M. College were used to represent the leaders in the study. No effort was made to discover how an individual became a leader. An additional sixty-nine subjects were classified as non-leaders on the basis of not holding or having held any elective office in any campus organization of a social nature. Leaders and non-leaders were selected on the basis of information obtained from the Dean's office of the school in which the students were enrolled and from the Dean of Men's office.

CHAPTER II

REVIEW OF THE LITERATURE

Numerous studies have been made of the personality characteristics of the leaders of the different kinds of groups in society. However, the present survey of literature does not include references to all the experiments conducted on leadership. This review is concerned only with those studies in which some attempt has been made to determine the personality traits and characteristics of leaders at the college level.

Methods of Identifying Leaders

Stogdill¹ pointed out that the following primary methods have been employed for the identification and study of the personal characteristics of leaders:

1. Observation of behavior in group situations.
2. Choice of associates (voting).
3. Nomination or rating by qualified observers.
4. Selection of persons occupying positions of leadership.

¹Ralph M. Stogdill, "Personal Factors Associated With Leadership: A Survey of the Literature," Journal of Psychology, 1948, Vol. XXV, 36-38.

5. Selection of leaders on the basis of analysis of their case histories and biographical data.

The salient details of each of these methods are described briefly below.

1. Observation and Time Sampling of Behavior in Group Situations.

In the studies using this method,

the behavior of two or more individuals is observed in situations which permit the emergence of leadership activities. The situation may be highly structured in advance;...or the situation may be natural and uncontrolled.... The periods of observation may range from five seconds at definitely spaced intervals to an hour or more of continuous observation.²

2. Choice of Associates (Voting, Naming, Ranking, Sociometrics).

The usual procedure is

to ask the members of a group to name the persons whom they would prefer as leaders, and, in some cases, to describe the characteristics of each nominee which make him desirable as a leader. Sociometrics is an extension of this method which involves the construction of a 'sociogram' or chart showing graphically the preference relationship of each member to every other member of the group.³

3. Nomination by Qualified Observer.

In this technique

leaders are named by teachers, club members, or other adult observers who are regarded as being in a position to identify the leaders in the groups selected. The leaders are compared with members of control groups. None of the studies employing this method are in any way outstanding.⁴

²Ibid., p. 36.

³Ibid., p. 37.

⁴Ibid.

4. Selection of Persons Occupying Positions of Leadership.

In this method of identification,

leadership is regarded as synonymous with holding office or some position of responsibility. The majority of the studies use high school or college subjects, and define leadership as holding some office, such as president of student body, president of fraternity or sorority, captain of athletic team, chairman of a club, and the like.⁵

5. Analysis of Biographical and Case History Data.

In studies using this method, the identification of leaders is based on the analysis of case histories and biographical data.⁶

Among the five methods which have been employed for the identification of leaders, the following methods were pertinent to this study as a basis for the review of the literature: (1) nomination of leaders by qualified observers, (2) identification of leaders by choice of associates, and (3) selection of persons occupying positions of leadership.

A College Leadership Study Identifying Leaders
By the Nomination of Qualified Observers

Burks⁷ attempted to study the personality factors which contribute to social success of college students. She

⁵Ibid.

⁶Ibid., p. 38.

⁷Frances W. Burks, "Some Factors Related to Social Success in College," Journal of Social Psychology, 1938, IX, 125-140.

studied the responses of twenty-six university students (thirteen men and thirteen women) who were nominated by friends of the investigator on the basis of the pronounced success or lack of success in personal social relations. On the basis of responses of these twenty-six students to a battery of three tests involving original solutions to difficult social situations, the Strong Vocational Interest Blank, and an inventory of personal characteristics and modes of behavior, the following general characteristics appear to make for successful social relations:

1. Natural, unforced humor based upon exaggeration, self ridicule, incongruity, and unexpected language.
2. Genuine sympathetic interest in people.
3. Vividness and originality of expression.
4. Constructive ideas relative to difficult situations.
5. Sincerity and directness of expression without impertinence.
6. Active sense of responsibility.
7. Adaptability.⁸

Factors she discovered to be associated with unsuccessful social relations appear to be:

1. Forced humor, or that which depends upon ridicule of others or which contains unpleasant suggestions.
2. Self absorption to the partial exclusion of genuine sympathy with others.

⁸Ibid., p. 139.

3. Vagueness and lack of originality of expression.
4. Formal moralizing about situations.
5. Hypocrisy, or impertinent frankness.
6. Irresponsibility.
7. Lack of interest in generally popular recreational activities.
8. Lack of adaptability.⁹

Burks concluded

Of these factors, sympathetic interest in others seems to be particularly important for successful relations with members of the same sex; and vividness of conversation a special asset for relations with the opposite sex.¹⁰

College Leadership Studies Identifying Leaders
by the Choice of Associates

Spaulding¹¹ studied sixteen leaders of the Long Beach Junior College. These sixteen leaders were selected on the basis of receiving the largest number of votes of a representative group of 250 students of the college. The sixteen leaders were observed at their customary activities on the campus. Contacts of an informal nature were made and interviews held. Judgments of fellow students and faculty

⁹Ibid.

¹⁰Ibid., pp. 139-140.

¹¹Charles B. Spaulding, "Types of Junior College Leaders," Sociology and Social Research, 1934, XVIII, 164-168.

members regarding each leader were collected. On the basis of these data the student leaders were put into five classes: (1) the social climber--a leader of this type is motivated by the desire to "be somebody," "to get somewhere," or "to get into things"; (2) the intellectual success--a leader of this type is motivated to find some intellectual activity, such as writing or debate, from which pleasure and status are derived; (3) the good fellow--a leader of this type is motivated primarily by the desire to be with other people; (4) the big athlete--a leader of this type is motivated by a desire "to make the team"; and (5) the athletic-activity type--a leader of this type is not only interested in athletics, but also is motivated by a desire for recognition in other school activities.

Zeleny¹² examined some of the characteristics of leaders and non-leaders in discussion groups to determine the characteristics of group leaders. Leadership abilities of the members of the class were determined by the five man-to-man leadership rating plan as well as by observation of each member of the group by special outside observers who counted each statement made by each member during a thirty minute discussion period. Correlations were made between leadership ratings and participation. From the data, Zeleny reports correlations ranging from .17 to .68 between

¹²L. Zeleny, "Characteristics of Group Leaders," Sociology and Social Research, 1939, XXIV, 140-149.

leadership and participation in extra-curricular activities. He found that leaders surpass non-leaders in the number, extent, and variety of group activities in which they participate and that popularity and prestige are associated rather closely with leadership status.

Hunter and Jordon¹³ identified eighty-two college leaders on the basis of ratings by faculty members and students, and leadership records. When the Bernreuter Personality Inventory percentile scores of the leaders were compared with the percentile scores of 103 non-leaders, it was revealed that the leaders were more self-sufficient and dominant than non-leaders. Leaders were found also to be more liberal in their social attitudes, more mature in interest, younger, and superior in intelligence, vocabulary, and scholarship.

Howell¹⁴ measured leadership by the Group Membership Record as used by Zeleny. According to Howell, this record may be presented as follows:

Each individual in a given group is given a list which contains the names of all of the persons in that group. He is asked to indicate whether he would like to associate with each other person in connection with a specific phase of social interaction--such as work, play, eating, and so forth--

¹³E. C. Hunter and A. M. Jordon, "An Analysis of Qualities Associated with Leadership Among College Students," Journal of Educational Psychology, 1939, XXX, 497-509.

¹⁴Charles E. Howell, "Measurement of Leadership," Sociometry, 1942, V, 163-168.

whether he would dislike such association, or whether he would be indifferent to it. He is further asked to make a choice of a given number of persons within the group with whom he would choose to associate if given a free choice.¹⁵

Zeleny's technique was used to obtain a measure of social status for the subjects. Individual status scores were correlated with scores of a leadership scale developed by Howell, the correlation being $.95 \pm .016$. It would appear from this that the degree of social status is a good measure of potential leadership. The leadership scores and the grade point averages of the ninety-four subjects then were correlated. The leadership scores were correlated also with the entrance psychological examination scores. Howell concluded that

...it is somewhat disturbing to find that status and leadership in the classroom situation, and as measured by these methods are not related to the factors, scholarship and intelligence, which are normally associated with desirable traits of leadership in that type of situation.¹⁶

Dunkerly¹⁷ used the Bernreuter Personality Inventory in a comparison of intellectual, social, and religious leaders in a women's college. Leaders were selected by a "Guess Who" technique and an imaginary election technique. Eight

¹⁵Ibid., pp. 163-164.

¹⁶Ibid., p. 168.

¹⁷H. M. Richardson and N. G. Hanawalt, "Leadership As Related to Bernreuter Personality Measures: I. College Leadership in Extra Curricular Activities," Journal of Social Psychology, 1943, XVII, 239.

leaders of each type were selected. Religious leaders were significantly less self-sufficient and dominant than intellectual leaders, and less neurotic, introverted, and dominant than were the social leaders. The comparisons were made in terms of percentage overlapping.

Hanawalt, Richardson, and Hamilton¹⁸ picked the individual items on the Bernreuter Personality Inventory which showed a significant difference in the responses of leaders and non-leaders. The subjects were eighty-one college women--thirty-six leaders and forty-five non-leaders--selected on the basis of a point scale based on number and leading offices held. The task was for each subject to take the Bernreuter Personality Inventory. The 125 items on the inventory were evaluated for the two groups by the chi-square test.

Only nine items out of 125 on the Inventory had P value of .02 or less, three had a P value between .02 and .05, and only twelve items had a P value between .05 and .10.

The investigators concluded on the basis of the item analysis that leaders are more willing to assume responsibility, are more self confident, are relatively free from feelings of humility and self-consciousness, and are more at

¹⁸N. G. Hanawalt, H. Richardson, and R. J. Hamilton, "Leadership As Related To Bernreuter Personality Measures: II. An Item Analysis of Responses of College Leaders and Non-Leaders," Journal of Social Psychology, 1943, XVII, 251-267.

ease in working in the presence of others. The item analysis also revealed that non-leaders tend to use the "?" response more frequently than leaders. This would tend to confirm the general notion that leaders are able to make decisions more quickly and more definitely than non-leaders.

Hanawalt, Hamilton, and Morris¹⁹ investigated the level of aspiration in twenty women college leaders and twenty women college non-leaders. Leaders were selected on the basis of a point system. Each campus office was assigned a certain number of points. To be considered a leader, it was necessary for an individual to accumulate fifteen or more points; the non-leader possessed three or less points. A simple letter substitution test was used in measuring the aspirational level. Each subject was informed of his score upon the completion of each trial. Each subject was tested individually and in private. He had no knowledge of the performance of other subjects in the experiment. The term "level of aspiration" as used in this experiment "is based upon the goal which the subject stated to the experimenter." The investigators found the average level of aspiration of the leaders was significantly higher than the average level of aspiration of the non-leaders at the .05 level.

¹⁹N. G. Hanawalt, C. E. Hamilton, and M. L. Morris, "Level of Aspiration in College Leaders and Non-Leaders," Journal of Abnormal and Social Psychology, 1943, XXXVIII, 545-548.

Fay and Middleton²⁰ studied to what extent listeners can judge the leadership characteristics of subjects from hearing their transmitted voices. Fifteen freshmen subjects of the same fraternity were rated on a seven point rating scale by ten seniors in the same fraternity for leadership. Each subject broadcast a short paragraph of material that had a reading time of about thirty seconds. The listeners (eighteen men and ten women) were enrolled in an introductory psychology class. Each voice was rated by each listener on a seven point rating scale for leadership. The investigators concluded, after comparing the fraternity men's rating on leadership with the listeners' rating on leadership, that leadership can be judged from the transmitted voice with an accuracy about equal to that of chance.

Drake²¹, in a study of leadership traits, had twenty-one college girls rate five girls whom they knew well on a seven point rating scale on thirty personality traits. Each trait was then correlated with all others in the list. Then these correlations were compared with correlations of traits of leadership on 200 boys prepared by Webb. Drake, on the basis of this comparison, concluded that the most important traits of college boys and girls positively related to

²⁰Paul I. Fay and Warren C. Middleton, "Judgment of Leadership from the Transmitted Voice," Journal of Social Psychology, 1943, XVII, 99-102.

²¹R. M. Drake, "A Study of Leadership," Character and Personality, 1944, XII, 285-289.

leadership are aggressiveness, common sense, originality, cheerfulness, emotional stability, humor, tact, persistence, trustworthiness, and desire to excel. Drake also concluded that traits negatively correlated with leadership are readiness to anger, selfishness, introversion, conceit, quick oscillation, pure mindedness, occasional extreme depression, and excitability.

Burnett²² studied characteristics of sophomores who were selected as leaders by a great many students. Burnett further studied the characteristic distribution of sociometric results of students who had the reputation for college campus leadership. A sociometric test was administered to the subjects. Data for studying the characteristics of leaders also were obtained from a twenty-six item Guess Who test. The investigator concluded that Guess Who and sociometric tests are useful in identifying and characterizing those students who had the reputation for campus leadership. The investigator found that 5.1 per cent of the sophomore class had the reputation for leadership.

Cobb²³ administered to fifty female elective college leaders and fifty female college non-leaders of the

²²Collins W. Burnett, "A Study of College Campus Leadership," American Psychologist, 1949, IV, 390-391.

²³Katherine Cobb, "Measuring Leadership in College Women by Free Association," Journal of Abnormal and Social Psychology, 1952, XLVII, 126-128.

University of Nebraska The Goodenough Speed of Association Test. This test consists of 238 homonyms; homonyms are words with two or more meanings in their written form. The subject responded in writing to each homonym with the first word or phrase that occurred to him. Three keys were developed for the test: the "M-F" or masculinity-femininity key, the "L" or leadership in women key, and the "C" or commonality key--commonality measures the degree to which the individual's responses are those most frequently used by associates. The non-leaders were matched with the leaders in age, class, and rural or urban residence. It was found that the "L" scores of leaders were significantly higher than those of non-leaders (C.R. = 7.29). The leaders also excelled the non-leaders on "C" (C.R. = 2.95).

Gordon²⁴ studied the extent to which certain personality variables are associated with leadership in college women. An election was held to select corridor leaders in a university dormitory. Three months after the election the subjects rated their corridor mates on five personality factors. These personality factors were sociability, ascendancy, responsibility, hypersensitivity, and refinement. Correlations of these personality ratings, measured intelligence, and nomination for leadership showed a substantial relationship between responsibility and leadership. Gordon

²⁴Leonard V. Gordon, "Personal Factors in Leadership," Journal of Social Psychology, 1952, XXXVI, 245-248.

concluded "a low positive relationship is found between leadership and Hypersensitivity, leadership and Ascendency, and leadership and Intelligence."²⁵

College Leadership Studies Selecting Persons
Occupying Positions of Leadership

Moore²⁶ compared twenty-five student leaders in the Texas State College for Women with 207 other students of this college. Leaders were selected on the basis of the number and nature of offices held. The other students for the control group were selected from classes in educational psychology, without reference to leadership ability. The characteristics studied were weight, height, age, scholarship, introversion-extroversion, and ascendance-submission. On the basis of this comparison, Moore concluded that members of the leadership group were taller, lighter in weight, and older on the average than members of the non-leadership group; the leaders ranked on the average 25 per cent higher in scholarship than the non-leaders; the leadership group was considerably more ascendant and slightly more extroverted.

²⁵Ibid., p. 248.

²⁶L. H. Moore, "Leadership Traits of College Women," Sociology and Social Research, 1935, XX, 136-139.

Middleton²⁷ investigated personality traits predominant among college student leaders on the DePauw University campus. In his investigation he limited his study to those who were holding the presidency of some prominent campus organization. Sixteen men and fourteen women were selected leaders on the basis of the adopted criteria. Four or more students who knew the leader well rated him on The North Carolina Scale for Fundamental Traits. The purpose of the ratings was to determine the outstanding qualities of campus leaders. When Middleton compared the mean personality ratings of the men and women leaders, no large sex differences were revealed.

The six traits among the women leaders which were given the highest mean rankings in order of their magnitude were character, intelligence, accuracy, persistence, artistic taste, and ambition. The six traits among the women leaders which were given the lowest mean ranking in order were radicalness, modesty, emotionality, decisiveness, and extroversion. The six traits among the men leaders which were given the highest mean rankings were character, intelligence, sociability, persistence, expressiveness, and judgment. Among the men leaders the six traits which were given the lowest mean rankings were radicalness, extroversion,

²⁷W. C. Middleton, "Personality Qualities Predominant in Campus Leaders," Journal of Social Psychology, 1941, XIII, 199-201.

modesty, emotionality, adaptability, and social sensibility. For the total group of leaders, the six highest mean rankings were character, intelligence, persistence, accuracy, sociability, and judgment. For the total group, the six lowest mean rankings were radicalism, modesty, emotionality, extroversion, decisiveness, and adaptability.

Richardson and Hanawalt²⁸ studied forty leaders in extra-curricular activities from a men's college and thirty-six from a women's college. Leaders were selected on the basis of holding various college offices. These leaders were compared with the published norms for college men and women with respect to average score on the Bernreuter scales for dominance, self-sufficiency, and introversion. These leaders were compared also with the published norms on the derived factors designated by Flanagan as sociability and self-confidence. Women leaders were compared with thirty-two non-leaders from the same college. The leaders were found to be significantly superior in dominance, and not significantly different from the control groups in sociability or self-sufficiency. In introversion the men and women leaders were significantly lower than the norm group; the women leaders tended to be lower in introversion than the

²⁸H. M. Richardson and N. G. Hanawalt, "Leadership As Related to the Bernreuter Personality Measures: I. College Leadership in Extra-curricular Activities," Journal of Social Psychology, 1943, XVII, 237-249.

non-leaders. In self-confidence the women leaders, but not the men, were reliably higher than the control group.

Williamson²⁹ studied the extent to which fraternity and sorority members dominated the important campus positions in student organizations and activities at the University of Minnesota. Data for the study were collected for the years 1941, 1944, and 1947. Fraternal groups were classified by the University as academic or professional. Academic fraternal groups included all fraternities and sororities that hold membership open to all students. Professional fraternal groups were those that limited membership to students studying in certain specified fields.

The total number of available leadership positions were divided into those held by academic fraternal, professional fraternal, and non-fraternal members; thus the total percentage of representation was obtained. The total representation by per cent was placed on an index number basis with 100 representing proportionate representation according to the composition of the entire student population. The following figures presented in systematized form were obtained for the years 1941, 1944, and 1947 for the groups studied:

²⁹E. G. Williamson, "The Group Origins of Student Leaders," Educational and Psychological Measurement, 1948, VIII, 603-612.

INDEX NUMBERS FOR LEADERSHIP POSITIONS
HELD BY GROUPS STUDIED

Groups Studied	1941	1944	1947
Academic fraternal groups	208	217	371
Professional fraternal groups	276	205	489
Non-fraternal	50	49	47

Thus it can be seen for the years studied that degree of concentration of fraternal groups in leadership positions increased and that the degree of concentration of non-fraternal groups decreased. It can be said, further, that fraternal groups were concentrated in leadership position in numbers that were disproportionate to the relative size of total fraternity membership.

Williamson and Hoyt³⁰ of the University of Minnesota (in the study referred to earlier) found that students holding certain positions of "formal" leadership differed significantly with respect to personality characteristics from students in general. These investigators used as their measure of personality the MMPI. Test scores of student leaders of religious organizations, political activity, publications, governing boards, and fraternities were compared with the test scores of unselected freshmen of the

³⁰E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, XII, 65-78.

class enrolling in September, 1948. The investigators encountered difficulties in finding a basis for comparing student leaders with students in general because the MMPI has not been given to enough students above freshmen classes to yield a large enough sample of the total college population. Williamson and Hoyt found that student leaders differed from students in general--in this case unselected freshmen--with respect to a number of measured personality characteristics. The results showed rather conclusively that the men activity leaders holding campus positions of responsibility scored higher than unselected freshmen on the K, Hs, Hy, Mf, and Ma scales of the MMPI.

CHAPTER III

MATERIALS AND PROCEDURES

The primary purpose of this investigation, as indicated earlier, was to go beyond the work of Williamson and Hoyt¹ with a study of social leadership as related to the MMPI employing a more rigorous control of variables in an attempt to do the following:

1. Pick the individual items on the MMPI which show a significant difference in the responses of male college leaders and non-leaders in order to secure a list of these items that may be used in constructing a scale to predict college leadership.
2. Discover which of the designated scales of the MMPI, if any, show a significant difference in the responses of leaders and non-leaders.

The experimental procedures employed are outlined below.

Subjects

The method employed for the identification of leaders was limited to the selection of persons occupying positions

¹E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, XII, 65-78.

of formal leadership at Oklahoma A. and M. College. To be more specific, the criterion of college leadership for this study was limited to the selection of those persons who were holding the presidency of some prominent campus organization of a social nature. No effort was made to discover how an individual became a leader. Presidents of fraternity groups, dormitories, religious organizations, social organizations, campus political organizations, and athletic organizations were used to represent the leaders in this study.

Non-leaders were selected on the basis of not holding any elective office at the present or in the past in any campus organization of a social nature. Leaders and non-leaders were selected on the basis of information in both the Dean's office of the schools in which the subjects were enrolled and the Dean of Men's office.

The leaders were contacted at their residences and were given the MMPI to take at their convenience. Non-leaders were selected among male students from two classes in Industrial Psychology, from two seminars in Industrial Management, from two classes in Agricultural Education, and from one class in Mental Hygiene.

General Information about the MMPI

In the present study, the investigator used the MMPI, a test of personality standardized essentially on

non-student populations of hospitalized adults and their relatives, which has been used widely in the counseling of students. A copy is included in the Appendix A.

The Minnesota Multiphasic Personality Inventory is a psychometric instrument designed ultimately to provide, in a single test, scores on all the more important phases of personality...The instrument itself comprises 550 statements covering a wide range of subject matter...from physical condition to the morale and social attitudes of the individual being tested.²

In the administration of the MMPI, the subject was asked to respond to all of the statements in one of three ways: True, False, and Cannot say. The subjects seemed interested in participating in taking the test and appeared to give full cooperation to the task.

Personality characteristics are evaluated on the basis of scores from nine clinical scales originally developed for use with the MMPI. These scales are hypochondriasis (Hs), depression (D), hysteria (Hy), psychopathic personality (Pd), masculinity-femininity (Mf), paranoia (Pa), psychasthenia (Pt), schizophrenia (Sc), and hypomania (Ma). A more recent scale listed on the MMPI profile is social introversion (Si). There are four validity scores: the question score (?), the lie score (L), the F score (F), and the K score (K). Several more new scales have been devised for

²S. R. Hathaway and J. C. McKinley, The Minnesota Multiphasic Personality Inventory Manual, New York: The Psychological Corporation, 1951, p. 5.

specific purposes; however, they are not listed on the MMPI profile, are not among the usually published scales, and have not been employed in this study.³ The raw score of the measured trait is translated into a standard score (T-score) and is plotted on a profile chart in order to present the results graphically.⁴

...The original normative data were derived from a sample of about 700 individuals representing a cross section of the Minnesota populations as obtained from visitors to the University Hospitals. The sampling was fairly adequate for the ages 16 to 55 and for both sexes.

In addition to these data on normal individuals, data were available of 250 precollege and college students who as a group represented a reasonably good cross section of college entrance applicants...

...The scales were developed by contrasting the normal groups with carefully studied clinical cases of which over 800 were available from the neuro-psychiatric division of the University Hospitals...The chief criterion of excellence was the valid prediction of clinical uses against the neuro-psychiatric staff diagnosis, rather than statistical measure of reliability and validity... As for validity, a high score on a scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than 60 percent of new psychiatric admissions. This percentage is derived from differentiations among various kinds of clinical cases, which is considerably more difficult than mere differentiation of abnormal from normal groups. Even in cases in which a high score is not followed by a corresponding diagnosis, the presence of the trait to an abnormal degree in the symptomatic picture will nearly always be noted.⁵

³Ibid., pp. 1-25.

⁴Ibid.

⁵Ibid., p. 6.

The test-retest reliability coefficients reported for the various specific, original scales of the MMPI range from .46 to .93.⁶

Instructions for Taking the MMPI

The leaders and the non-leaders were asked to fill out the MMPI. Both groups were informed that the purpose of filling out the inventory was to further validate the inventory. The true object of the investigation was not revealed to the subjects.

The instructions to the subjects for taking the MMPI for the investigation were the same as the instructions that appear on the "Booklet for the Minnesota Multiphasic Personality Inventory." The subjects were asked to read and follow the instructions appearing on the booklet which are:

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If a statement is TRUE or MOSTLY TRUE, as applied to you, blacken between the lines in the column headed T. (See A at the right.) If a statement is FALSE or NOT USUALLY TRUE, as applied to you, blacken between the lines in the column headed F. (See B at the right.) If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

⁶Ibid., p. 7.

Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks on this booklet.

Remember, try to make some answer to every statement.

NOW OPEN THE BOOKLET AND GO AHEAD.

The Matching of Groups

As mentioned earlier, Williamson and Hoyt⁷ encountered difficulties in finding a basis for comparing student leaders with students in general because the MMPI had not been given to enough students above the freshman class level to yield a large enough sample of the total college population. Consequently, Williamson and Hoyt compared MMPI test scores of student leaders with the MMPI test scores of an available 70 per cent of the University of Minnesota freshman class enrolling in September, 1948. In their study the personality differences that were observed for student leaders and the non-leaders (unselected freshmen) were based on two groups that were not matched on any variables that might influence leadership. In fact, the only factor the

⁷E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, XII, 67.

experimental and the control group had in common was that both groups were enrolled in college: the student leaders were enrolled as upper classmen; the non-leaders were enrolled as freshmen.

Earlier it was stated that the primary purpose of this investigation was to go beyond the study of Williamson and Hoyt with an investigation of social leadership that had a more precise experimental design. This end was accomplished by matching the leadership group ($N = 35$) with the non-leadership group ($N = 35$) on five variables.

The student leaders were matched with the student non-leaders on the following five characteristics:

1. Restricted to male members of the college population.
2. Matched on the basis of being upper division students; i.e., juniors and seniors; the upper division leaders were matched with the same number of upper division non-leaders.
3. Matched on the basis of school; for example, the same number of engineer leaders were matched with the same number of engineer non-leaders. That is, the leaders from each of the various schools were matched with a like number of non-leaders from each of the various schools.
4. Matched on the basis of intelligence. The mean of the American Council on Education Psychological

Examination (ACE) scores of the leaders was compared with the mean of the ACE scores of the non-leaders.⁸ The differences between the means and the sigmas were tested, and, since there were no significant differences between the means and the sigmas, it was presumed that the groups were not significantly different regarding intelligence.

5. Matched on the basis of grades. Over-all grade point averages were utilized regardless of student's classification. The mean of the grade points of leaders was compared with the mean of the grade points of non-leaders. The differences between the means and the sigmas were tested, and, since no significant differences occurred, it was presumed that the groups were not different in regards to grade points earned.

This matched group of leaders and non-leaders will be referred to hereafter as Group I.

The Cross Validation Group

To check on the validity of the individual items which show a significant difference between leaders and non-leaders, and to check on the validity of the scales which

⁸The American Council on Education Psychological Examination hereafter will be referred to as the ACE.

show a significant difference in the responses of leaders and non-leaders a hold-out or cross validation group of student leaders and non-leaders was selected on precisely the same basis as the leaders and non-leaders of Group I were selected. This cross validation group will be referred to hereafter as Group II.

3. Kirkpatrick states that

...if the validity of a test is not determined on a hold-out group, the results are likely to be misleading. Validity cannot be created by item analysis. However, the impression of validity may be created by failing to follow cross-validation procedures.⁹

Results of the Matching of Groups

Table I shows the matching of the leaders and non-leaders of Groups I and II on the ACE (total scores).

From the statistical data given in Table I, the t-values indicate that the difference between means of the leaders and non-leaders of Group I does not differ significantly at the 5 per cent level of confidence. It may be concluded that the sub-groups of Group I are matched adequately. In Table I the t-values indicate that the difference between means of the leaders and non-leaders of Group II does not differ significantly at the 5 per cent level of

⁹J. J. Kirkpatrick, "Cross Validation of a Forced Choice Personality Inventory," Journal of Applied Psychology, 1951, XXXV, 415.

confidence. Thus it can be concluded that the sub-groups of Group II are matched adequately..

TABLE I¹

MEANS, STANDARD DEVIATIONS AND t-VALUES FOR THE
LEADERS AND NON-LEADERS FOR GROUPS I AND II
MATCHED ON ACE (TOTAL SCORES)

	Group I		Group II	
	Leaders	Non-Leaders	Leaders	Non-Leaders
N	35	35	34	34
Mean	106.20	106.08	102.23	101.50
Standard Deviation	18.60	15.72	23.34	22.86
t		.02		.13
P		>.50		>.50

¹Tables B-1 and B-2 in the Appendix B show the data upon which leaders and non-leaders of Groups I and II were matched on ACE (total scores).

Table II shows the matching of the leaders and the non-leaders of Groups I and II on grade points.

From the statistical data given in Table II, the t-values indicate that the difference between means of the leaders and non-leaders of Group I do not differ significantly at the 5 per cent level of confidence. It can be concluded that the sub-groups of Group I are matched adequately. In Table II, the t-values indicate that the difference between means of the leaders and non-leaders of

Group II do not differ significantly at the 5 per cent level of confidence.

It may be concluded that the sub-groups of Group II are matched adequately.

TABLE II¹

MEANS, STANDARD DEVIATIONS, AND t-VALUES FOR LEADERS
AND NON-LEADERS FOR GROUPS I AND II MATCHED
ON GRADE POINT AVERAGE (TOTAL)

	Group I		Group II	
	Leaders	Non-Leaders	Leaders	Non-Leaders
N	35	35	34	34
Mean	2.63	2.60	2.69	2.49
Standard Deviation	.54	.60	.57	.58
t		.21		1.36
P		>.50		>.10

¹Tables B-3 and B-4 in the Appendix B show the data upon which the leaders and non-leaders of Groups I and II were matched on Grade Point Average (total).

The Item Analysis

As mentioned in Chapter II, Hanawalt, Richardson, and Hamilton¹⁰ picked the individual items on the Bernreuter

¹⁰N. G. Hanawalt, H. Richardson, and R. J. Hamilton, "Leadership As Related to Bernreuter Personality Measures: II. An Item Analysis of Responses of College Leaders and Non-Leaders, Journal of Social Psychology, 1943, XVII, 251-267.

Personality Inventory which showed a significant difference in the responses of leaders and non-leaders. Their investigation of the Bernreuter Personality Inventory suggested the item analysis of the MMPI in the present study. The identical experimental procedures, however, used in the item analysis of the Bernreuter Personality Inventory were not employed in the item analysis of the MMPI. The details of the experimental procedures used in the item analysis of the MMPI are as follows:

The item analysis of the MMPI was divided into three parts.

Part I of the analysis was concerned with developing a key on Group I which was applied to Group II. Conversely, a key was developed on Group II and applied to Group I.

The following steps were observed in making the item analysis of Part I:

1. A tabulation of the true and false responses of the leaders and non-leaders of Group I to each of the 566 items of the MMPI was prepared. This step in the tabulation of responses was expedited by the aid of the item counter of the International Business Test Scoring machine.
2. The significance of the difference between the percentages was calculated for each of the 566 items. A nomograph designed by Lawshe was used to assign

such an index of significance known as Omega.¹¹ The nomograph¹² was used to determine the percentage of the leadership group saying true to an item on the scale at the left and the corresponding value of the non-leadership group to the item on the right; the two points were connected with a straight edge; and the value on the middle scale read where the straight edge intersected the scale line to obtain the Omega value.

Items with a negative Omega value always indicated that the non-leadership group answered true to the item more often than the leadership group. In this fashion every item was assigned an Omega value.

3. Omega (ω) values were converted into t-values by means of the following formula:¹³

$$t = \omega \sqrt{N-1}$$

(when $N_1 = N_2$)

¹¹C. H. Lawshe, Jr., and P. C. Baker, "Three Aids in the Evaluation of the Significance of the Difference Between Percentages," Educational and Psychological Measurement, 1950, X, 263-269.

¹²C. H. Lawshe, Jr., Principles of Personnel Testing, First Edition, p. 186.

¹³C. H. Lawshe, Jr., and P. C. Baker, The Significance of the Difference Between Two Percentages, 1949. (Published privately).

4. Only those individual items with t-values that significantly differentiated the leaders from the non-leaders at the .05 level were selected.
5. The "correct" answer to each item identified in the previous step was assigned. The "correct" answer was assigned on the basis of how the majority of leaders responded to an item. For example, suppose on Item 8, twenty-nine of the thirty-five leaders responded "true"--thus the accepted "correct" answer to this item would be true.
6. A key was made of "correct" responses for the items identified in 4. With this key, the corresponding items of Group II were scored. For example, say Item 8 was identified in 4. Further, the "correct" answer was true. Then Item 8 for Group II was scored against the key for the number of "true" responses for the leaders and the non-leaders. Each "correct" response was given the numerical value of 1.
7. The average score of the leaders for Group II and the average score of the non-leaders of Group II were computed.
8. The significance of the difference between the means was calculated in 7.
9. The first five steps of the item analysis were carried out again for Group II.

10. A key of "correct" responses for the items identified in 9 was made for Group II. With this key of "correct" responses, the corresponding items of Group I were scored for leaders and non-leaders.
11. The average score of the leaders and the average score of the non-leaders of Group I were determined.
12. The significance of the difference between the means was calculated in step 11.

Part II of the item analysis was concerned with the development of a "refined" key on Group I which was applied to Group II. A "refined" key was developed also on Group II and applied to Group I.

Inasmuch as the t-values for each of the 566 items were determined in Part I of the item analysis, the following steps were followed in developing the "refined" key for Group I and applying the "refined" key to Group II.

1. Only those individual items were selected for the "refined" key that met the following criteria:
 - a. Items that had t-values that significantly differentiated the leaders from the non-leaders at the .05 per cent level of confidence.
 - b. Items on which responses cross validated in a given direction on the identical items of Group II were retained.

- c. Any item selected for the "refined" key by the above criteria was eliminated if the number of "correct" responses was identical for both the leaders and the non-leaders of Group II. For example, assume the "correct" answer for Item 8 was "true." Then when Item 8 for Group II was scored against the key for the number of "true" responses for the leaders and non-leaders, it was found that thirty-four of the leaders and thirty-four of the non-leaders answered "true." Thus this item was eliminated from consideration as the scores for the leaders and the non-leaders on Item 8 of Group II were identical.
2. A "refined" key of "correct" responses was made up for the items identified in 1. With this "refined" key, the corresponding items of Group II were scored. For example, suppose Item 8 was identified in 1, and suppose further the correct answer was "true." Then Item 8 for Group II was scored against the key for the number of "true" responses for the leaders and the non-leaders. Each correct response was given the numerical value of 1.
3. The average score of the leaders for Group II was computed as well as the average score of the non-leaders for Group II.

4. The significance of the difference between the means calculated in 3 was determined.
5. Perform the first step of Part II of the item analysis with Group II.
6. A key of correct responses for the items identified in 5 for Group II was made up, and, with this "refined" key, the corresponding items of Group I were scored for leaders and non-leaders.
7. The average score of the leaders and the average score of the non-leaders of Group I were determined.
8. The significance of the difference between the means calculated in 7 was computed.

Part III of the item analysis was concerned with the identification of the individual items of the MMPI that significantly differentiated the leaders and the non-leaders of Groups I and II.

The following steps were observed in making the item analysis of Part III:

1. From Groups I and II only those items were selected that significantly differentiated the leaders from the non-leaders at the .05 and .10 level. The confidence level was lowered to the .10 in order to maintain some items that might otherwise be discarded by a too stringent criterion of elimination.

2. From items identified in 1, only those items were selected that cross validated in a given direction. For example, the items the leaders of Groups I and II answered in a given direction, say "true," more often than the non-leaders of Groups I and II, or the non-leaders of Groups I and II answered "true" more often than the leaders of Groups I and II.

The Comparison of Leaders and Non-Leaders
on the Scales of the MMPI

The leaders and non-leaders of Groups I and II were evaluated on the following scales of the MMPI which are presumed to measure the following aspects of personality and personality adjustment:

Hypochondriasis (Hs). This is a measure of anxious concern with one's health and bodily functions, usually marked to an abnormal degree in those who are emotionally unstable and neurotic; these people always have some type of complaint about their physical well being which interferes with normal efficiency.

Depression (D). This is a measure of the clinically recognized symptom, depression. The person who reacts to stress with depression is characterized by lack of self-confidence, a feeling of uselessness, tendency to worry, and inability to assume a normal optimism with regard to the future.

Hysteria (Hy). This is a measure of the degree to which the person is like patients who have developed conversion-type hysteria symptoms. The subject may solve the problems facing him by the development of bodily symptoms. Such symptoms may take the form of a more general systemic complaint or more specific complaints, such as paralyses, intestinal complaints, or cardiac symptoms. The hysterical subjects are more emotionally immature than any other group.

Psychopathic Deviate (Pd). This is a measure of the degree to which the subject is like a group of persons whose main problem lies in their absence of deep emotional response, their failure to profit from experience, and their frequent digressions from social mores. Their disregard of social mores is manifested in stealing, sexual immorality, lying, and drug or alcohol addiction. Usually these persons are likable and intelligent.

Masculinity-Femininity Interest Pattern (Mf). This is a measure of the tendency toward masculinity or femininity of interest pattern. A high score on this scale indicates an interest pattern in the direction of the opposite sex.

Paranoia Scale (Pa). This is a measure of the degree to which the subject is like a group of clinical patients

who were characterized by oversensitivity, delusions of persecution, and suspiciousness.

Psychasthenia (Pt). This is a measure of the degree to which the subject is like patients who are troubled by phobias or compulsions. The phobias include all kinds of unreasonable fear of situations or things. The compulsive behavior may be overt, e.g., as manifested by excessive hand washing, or covert, e.g., as the inability to escape obsessive ideas. Oftentimes, a tendency toward psychasthenia may be expressed in lack of confidence, mild depression, excessive worry, or inability to concentrate.

Social Introversion-Extroversion (Si). This is a measure of the tendency to withdraw from social contacts with other people. The introvert lives within himself; the extrovert reacts mainly to the external world. The introvert is more interested in ideas and values whereas the extrovert is more interested in people and things.

Schizophrenia (Sc). This is a measure of the degree to which the subject is like patients who are characterized by bizarre and unusual thoughts and behavior. Bizarre or queer thoughts and behavior are the most common features of schizophrenic reactions. Schizophrenia represents a withdrawal type of adjustment in which the individual under adequate stress is removed

from an unsatisfactory environment and put into a subjective environment of his own making.

Hypomania (Ma). This is a measure of the degree to which the subject is like patients who are characterized with marked overproductivity in thought and action. Usually a hypomanic patient gets into difficulty because of undertaking too many things. Generally the hypomanic patient is active and enthusiastic; however, at times he may be somewhat depressed.

The K Score (K). This is a measure of the subject's attitude toward personality test items; i.e., the subject's desire to make a good or bad record on the test. A high K may indicate a defensiveness against feelings of inadequacy. A low K may indicate that a subject is extremely candid and makes admissions of symptoms even though they may not be deep-seated.¹⁴

In analyzing the data of the two groups, the following treatments were carried out:

1. The means and the standard deviations for the leaders and non-leaders of Groups I and II were computed.
2. The standard error of the mean for the leaders and the non-leaders of Groups I and II were determined.

¹⁴S. R. Hathaway and J. C. McKinley, The Minnesota Multiphasic Personality Inventory Manual, New York: The Psychological Corporation, 1951, pp. 18-22.

3. The standard error of the difference between the means for the leaders and non-leaders of Groups I and II were assessed.
4. The t-value or critical ratio was computed for the means of Groups I and II; this t-value was tested for significance at the .05 level of confidence to determine if the two groups differed significantly on the various scales.

CHAPTER IV

RESULTS AND INTERPRETATIONS

The present chapter will present the results and interpretations regarding:

1. Each of the three parts of the item analysis.
2. The comparison of scales of the MMPI for Groups I and II.

Results of the Item Analysis

Table III presents data relevant to Part I of the item analysis. Part I was concerned with developing a key on Group I and the application of this key to Group II.

From the data given in Table III, it may be observed that the mean for the leaders of Group II is 28.43, while that for the non-leaders of Group II is 27.43, or an actual difference of 1.00.

Table IV also presents data relevant to Part I of the item analysis. Part I of the item analysis was concerned further with developing a key on Group II which was applied to Group I.

TABLE III

APPLICATION OF KEY TO GROUP II DEVELOPED ON GROUP I

Item Number of Differentiating Items of Group I	Key or Correct Response for the Item	Score for Leaders of Group II on the Item	Score for Non- Leaders of Group II on the Item	
1	8	True	32	28
2	10	False	33	33
3	17	True	34	31
4	18	True	27	29
5	23	False	34	32
6	31	False	32	30
7	37	True	31	32
8	45	True	26	24
9	46	True	29	31
10	47	False	31	32
11	51	True	32	30
12	57	True	27	24
13	70	True	14	20
14	90	True	31	33
15	97	False	29	27
16	107	True	32	30
17	115	True	31	27
18	121	False	33	33
19	141	False	13	13
20	153	True	34	32
21	154	True	32	30
22	160	True	23	25
23	171	False	26	23
24	174	True	23	27
25	178	True	31	31
26	192	True	32	34
27	196	True	34	33

TABLE III--Continued

Item Number of Differentiating Items of Group I	Key or Correct Response for the Item	Score for Leaders of Group II on the Item	Score for Non- Leaders of Group II on the Item
28	200	False	34
29	218	False	28
30	222	True	14
31	237	True	23
32	243	True	29
33	246	False	34
34	249	False	13
35	257	True	33
36	258	True	32
37	267	False	27
38	285	True	34
39	301	False	29
40	304	False	24
41	310	True	29
42	311	False	25
43	318	True	34
44	324	False	34
45	326	False	34
46	344	False	31
47	348	False	19
48	356	False	31
49	362	False	26
50	366	False	32
51	373	False	18
52	384	False	19
53	386	False	34
54	411	False	32
55	459	False	32

TABLE III--Continued

Item Number of Differentiating Items of Group I		Key or Correct Response for the Item	Score for Leaders of Group II on the Item		Score for Non- Leaders of Group II on the Item	
56	462	True	33		30	
57	471	False	33		31	
58	482	True	27		26	
59	483	True	23		30	
60	527	True	26		29	
61	534	True	25		23	
62	536	False	21		22	
63	557	False	33		34	
Total			1791	Total	1728	
Mean			28.43	Mean	27.43	

TABLE IV

APPLICATION OF KEY TO GROUP I DEVELOPED ON GROUP II

Item Number of Differentiating Items of Group II		Key or Correct Response for the Item	Score for Leaders of Group I on the Item	Score for Non- Leaders of Group I on the Item
1	17	True	35	32
2	25	True	15	16
3	38	False	25	19
4	50	False	34	34
5	60	True	33	32
6	71	True	27	27
7	76	False	34	35
8	78	True	23	21
9	83	True	35	34
10	117	False	25	22
11	129	False	27	21
12	149	False	28	30
13	179	False	34	32
14	205	False	34	33
15	206	False	28	32
16	212	False	34	32
17	213	False	33	35
18	214	False	17	17
19	224	False	32	30
20	227	False	33	30
21	236	False	31	31
22	245	False	34	32
23	256	False	35	35
24	262	True	30	30
25	278	False	21	21
26	297	False	33	28
27	309	True	34	33

TABLE IV--Continued

Item Number of Differentiating Items of Group II	Key or Correct Response for the Item	Score for Leaders of Group I on the Item	Score for Non- Leaders of Group I on the Item	
28	318	True	34	28
29	327	True	21	20
30	357	False	31	27
31	362	False	27	34
32	377	False	32	34
33	379	True	28	24
34	386	False	24	32
35	406	False	26	21
36	407	True	31	30
37	416	False	24	27
38	419	False	32	32
39	422	False	33	32
40	433	False	31	33
41	435	False	32	28
42	454	False	31	28
43	476	False	32	31
44	483	True	23	32
45	484	False	31	26
46	487	False	34	35
47	541	False	29	33
Total		1390	Total	1361
Mean		29.57	Mean	28.96

From the data given in Table IV, it may be observed that the mean for the leaders of Group I is 29.57 and that for the non-leaders of Group I is 28.96, or an actual difference of .61.

Table V shows the t-values between means for the statistically significant items for Groups I and II for Part I of the item analysis.

TABLE V
THE t-VALUES BETWEEN MEANS FOR SIGNIFICANT ITEMS
FOR GROUPS I AND II FOR PART I
OF THE ITEM ANALYSIS

	Group I N = 68	Group II N = 66
Mean for Leaders	28.43	29.57
Mean for Non-leaders	27.43	28.96
t	.95	.58
P	>.50	>.50

From the statistical data given in Table V, the t-values between the means for the leaders and non-leaders for Groups I and II indicate that the means do not differ significantly at the .05 level of confidence.

Table VI presents data relevant to Part II of the item analysis. Part II was concerned with developing a "refined" key on Group I and the application of the "refined" key to Group II.

TABLE VI

APPLICATION OF "REFINED" KEY TO GROUP II DEVELOPED ON GROUP I

Item Number of Differentiating Items of Group I	Key or Correct Response for the Item	Score for Leaders of Group II on the Item	Score for Non- Leaders of Group II on the Item	
1	8	True	32	28
2	17	True	34	31
3	18	True	27	29
4	23	False	34	32
5	31	False	32	30
6	37	True	31	32
7	51	True	32	30
8	57	True	27	24
9	70	True	14	20
10	97	False	29	27
11	107	True	32	30
12	154	True	32	30
13	171	False	26	23
14	192	True	32	34
15	237	True	23	16
16	243	True	29	30
17	246	False	34	33
18	249	False	13	6
19	258	True	32	34
20	267	False	27	24
21	304	False	24	19
22	310	True	29	28
23	311	False	25	14
24	318	True	34	29
25	356	False	31	26

TABLE VI--Continued

Item Number of Differentiating Items of Group I		Key or Correct Response for the Item	Score for Leaders of Group II on the Item	Score for Non- Leaders of Group II on the Item
26	362	False	26	27
27	373	False	18	21
28	384	False	19	20
29	411	False	32	29
30	459	False	32	31
31	462	True	33	30
32	471	False	33	31
33	482	True	27	26
34	483	True	23	30
35	557	False	33	34
Total			991	938
Mean			28.31	26.80

From the data given in Table VI, it may be observed that the mean for the leaders of Group II is 28.31 and that for the non-leaders of Group II is 26.80, or an actual difference of 1.51.

Table VII presents data relevant to Part II of the item analysis. Part II was concerned with developing a "refined" key on Group II which was applied to Group I.

From the statistical data given in Table VII, it may be observed that the mean for the leaders of Group I is 30.60; the mean for the non-leaders of Group I is 29.12, or an actual difference of 1.48.

TABLE VII

APPLICATION OF "REFINED" KEY TO GROUP I DEVELOPED ON GROUP II

Item Number of Differentiating Items of Group II		Key or Correct Response for the Item	Score for Leaders of Group I on the Item	Score for Non- Leaders of Group I on the Item
1	17	True	35	32
2	38	False	25	19
3	60	True	33	32
4	78	True	23	21
5	83	True	35	34
6	129	False	27	21
7	149	False	28	30
8	205	False	34	33
9	212	False	34	32
10	224	False	32	30
11	227	False	33	30
12	245	False	34	32
13	297	False	33	28
14	309	True	34	33
15	318	True	34	28
16	357	False	31	27
17	362	False	27	34
18	379	True	28	24
19	407	True	31	30
20	416	False	24	27
21	422	False	33	32
22	433	False	31	33
23	435	False	32	28
24	483	False	23	32
25	484	False	31	26
Total			765	728
Mean			30.60	29.12

Table VIII shows the t-values between means and levels of confidence for the statistically significant items for Groups I and II for Part II of the item analysis.

TABLE VIII
THE t-VALUES BETWEEN MEANS FOR SIGNIFICANT
ITEMS FOR GROUPS I AND II FOR PART II OF
THE ITEM ANALYSIS

	Group I N = 68	Group II N = 66
Mean for Leaders	28.31	30.60
Mean for Non-leaders	26.80	29.12
t	1.06	1.30
P	>.10	>.10

From the statistical data given in Table VIII, the t-values between the means for the leaders and non-leaders for Groups I and II indicate that the means do not differ significantly at the .05 level of confidence.

Part III of the item analysis was concerned with the identification of the individual items of the MMPI that significantly differentiated the leaders and the non-leaders of Groups I and II. Table IX presents the results of Part III of the item analysis.

TABLE IX¹

ITEMS OF THE MMPI WITH P VALUES OF .10 OR
LESS THAT CROSS VALIDATED IN A GIVEN
DIRECTION FOR GROUPS I AND II

Item Number	P values equal .05 or less
* 17.	My father was a good man.
** 23.	I am troubled by attacks of nausea and vomiting.
**249.	I believe there is a Devil and a Hell in after life.
**311.	During one period when I was a youngster I engaged in petty thievery.
*318.	My daily life is full of things that keep me interested.
*362.	I am more sensitive than most other people.
**483.	Christ performed miracles such as changing water into wine.
P values between .05 and .10	
* 54.	I am liked by most people that know me.
**192.	I have had no difficulty in keeping my balance in walking.
**258.	I believe there is a God.

¹Table B-5 in Appendix B shows data on which the fifteen items were isolated.

*The items preceded by an asterisk show items that cross validated in the direction of leaders; i.e., the leaders answered "true" to the item more often than non-leaders.

**The items preceded by two asterisks show items that cross validated in the direction of non-leaders; i.e., the non-leaders answered "true" to the item more often than the leaders.

TABLE IX--Continued

P values between .05 and .10	
**297.	I wish I were not bothered by thoughts of sex.
**304.	In school I found it very hard to talk before the class.
**344.	Often I cross the street in order not to meet someone I see.
**356.	I have more trouble concentrating than others seem to have.
*560.	I am greatly bothered by forgetting where I put things.

Interpretations Regarding the Three Parts
of the Item Analysis

From Table III it may be observed that the mean scores for the leaders and non-leaders of Group II are practically identical. The mean score for the leaders is 28.43; the mean score for the non-leaders is 27.43. The meaning of similar mean scores in terms of performance indicates that the leaders and non-leaders are very much alike in the way they responded to the items in the MMPI.

From Table V it may be observed that the difference between the means of the leaders and non-leaders of Group II is not significant at the .05 level of confidence. Thus, it can be said that neither the leaders nor the non-leaders of Group II differ appreciably in their responses to the key developed for Group I. Consequently, it may be assumed that the key developed for Group I did not hold up on the cross validation group, Group II.

From Table IV it may be observed that the mean scores for the leaders and non-leaders of Group I are similar. The mean score for the leaders is 29.57; the mean score for the non-leaders is 28.96. The meaning of similar mean scores in terms of performance indicates that the leaders and non-leaders are very much alike in the way they responded to the items in the MMPI.

From Table V it may be observed that the difference between the means of the leaders and non-leaders of Group I

is not significant at the .05 level of confidence. Thus, it can be said that neither the leaders nor the non-leaders of Group I differ appreciably in their responses to the key developed for Group II. It appears that the key developed for Group II did not hold up on the cross validation group, Group I. Moreover, it can be said that the keys developed in Groups I and II did not hold up under double cross validation.

From Table VI it may be observed that the mean scores for the leaders and non-leaders of Group II are similar. The mean score for the leaders is 28.31; the mean score for the non-leaders is 26.80. The meaning of similar mean scores in terms of performance indicates that the leaders and non-leaders are very much alike in the way they responded to the items in the MMPI.

From Table VIII it may be observed that the difference between the means of the leaders and non-leaders of Group II is not significant at the .05 level of confidence. Thus, it can be said that neither the leaders nor the non-leaders of Group II differ appreciably in their responses to the "refined" key developed on Group I. The "refined" key developed on Group I did not hold up on the cross validation group, Group II.

From Table VII it may be observed that the mean scores for the leaders and non-leaders of Group I are similar. The mean score for the leaders is 30.60; the mean score for the

non-leaders is 29.12. The meaning of similar mean scores in terms of performance indicates that the leaders and non-leaders are very much alike in the way they responded to the items in the MMPI.

From Table VIII it may be observed that the difference between the means of the leaders and the non-leaders of Group I is not significant at the .05 level of confidence. Neither the leaders nor the non-leaders of Group I differ appreciably in their responses to the "refined" key developed for Group II. It appears that the "refined" key developed on Group II did not hold up on the cross validation group, Group I. It can be observed also that the "refined" keys developed on Groups I and II did not hold up under double cross validation.

Examination of Table IX reveals that only fifteen of the 566 items of the MMPI with a P value of .10 or less cross validated in a given direction. Seven of the fifteen items had a P value of .05 or less. Eight of the fifteen items had P values between .05 and .10 level.

These fifteen items appear to be miscellaneous in character. If an attempt were made to determine the use to which these items might be put, it would be a guess to suppose that they measured leadership qualities. Even if the items that cross validated were not miscellaneous in character, more items would be needed to give a complete picture of leadership qualities. Three or four times as

many items at better than the five per cent level of confidence are needed to build a reliable leadership scale.

It may be that the definition of leadership employed in this investigation and the definitions of leadership employed in other investigations are too broad. In the present study leaders were selected on the basis of being presidents of fraternities, religious organizations, athletic organizations, political and class organizations, and others. The qualities of religious leaders may differ from those of athletic leaders. The qualities of political leaders may differ from those of religious leaders. Some of these qualities may overlap considerably. Future investigators may have better success in securing items if only leaders from fraternities and class organizations were selected. (The reason for selecting leaders from so many different types of organizations in the present investigation was to have enough leaders for a cross validation study.) Future investigators may have better success in securing items if it is taken into consideration that the reasons for being in a position of leadership are many, and some of these may not reflect leadership qualities. Furthermore, in view of the results of the three parts of the item analysis, it is felt that further studies are needed to determine the proper experimental design for securing items to measure leadership qualities.

Comparison of Scales

Table X shows the comparison of scales of the MMPI for the leaders and non-leaders of Groups I and II.

Interpretations Regarding the Comparison of Scales of the MMPI

Findings on two of the MMPI scales pointed in the direction of a significant difference between the groups in mean scores that would hold up under cross validation.

One of these scales was the Psychasthenia Scale. For Group I the mean score for the non-leaders was 54.77 and 49.91 for the leaders, or a difference of 4.86. This difference of 4.86 yields a t-value of 2.22 which is significant at the .05 confidence level. For Group II on the Psychasthenia Scale, the mean score was for non-leaders 58.06 and for leaders 52.91, or a difference of 5.15. This difference of 5.15 yields a t-value of 2.04. This t of 2.04 is significant at .05 level. It may be assumed, therefore, that a true difference exists between the leaders and non-leaders on the Pt Scale for both groups.

Since the Psychasthenia Scale measures the similarity of the subjects' responses to those of patients who are characterized by phobias or compulsive behavior, it may be assumed that the mean scores suggest that non-leaders exhibit these tendencies more frequently than leaders.

TABLE X
DIFFERENCES BETWEEN MEANS OF SCALES OF MMPI FOR
LEADERS AND NON-LEADERS GROUPS I AND II

Scale		Leaders		Non-Leaders
Group I Ma Scale	Mean	57.14		57.80
	Sigma	11.56		8.47
	t		.27	
Group II Ma Scale	Mean	58.35		57.47
	Sigma	8.59		12.39
	t		.33	
Group I D Scale	Mean	45.77		50.37
	Sigma	8.14		11.12
	t		1.94	
Group II D Scale	Mean	49.65		52.56
	Sigma	9.76		10.36
	t		1.17	
Group I K Scale	Mean	58.29		58.09
	Sigma	8.71		8.91
	t		.09	
Group II K Scale	Mean	55.50		54.88
	Sigma	8.41		9.43
	t		.28	
Group I Pt Scale	Mean	49.91		54.77
	Sigma	8.15		9.79
	t		2.22	
Group II Pt Scale	Mean	52.91		58.06
	Sigma	7.46		12.45
	t		2.04	
Group I Si Scale	Mean	42.86		45.43
	Sigma	5.24		8.78
	t		1.46	
Group II Si Scale	Mean	44.88		48.91
	Sigma	7.18		10.30
	t		1.85	

TABLE X--Continued

Scale		Leaders		Non-Leaders
Group I Mf Scale	Mean Sigma t	57.11 9.14	.60	58.40 8.56
Group II Mf Scale	Mean Sigma t	57.50 11.69	.66	55.85 8.13
Group I Hy Scale	Mean Sigma t	56.29 8.23	.45	57.09 6.37
Group II Hy Scale	Means Sigma t	56.09 10.49	.13	56.38 6.90
Group I Hs Scale	Mean Sigma t	52.91 8.86 .16	.16	53.20 6.23
Group II Hs Scale	Mean Sigma t	53.56 9.80	.25	54.18 10.37
Group I Pd Scale	Mean Sigma t	54.66 9.10	.69	56.29 10.31
Group II Pd Scale	Mean Sigma t	52.38 7.13	2.34	56.94 8.63
Group I Pa Scale	Mean Sigma t	53.89 7.97	.01	53.91 6.60
Group II Pa Scale	Mean Sigma t	50.29 8.32	1.83	53.91 7.73

TABLE X--Continued

Scale		Leaders	Non-Leaders
Group I Sc Scale	Mean	50.34	56.94
	Sigma	8.87	8.03
	t		3.22
Group II Sc Scale	Mean	51.94	56.79
	Sigma	10.30	9.31
	t		2.01

The other scale of the MMPI that pointed in the direction of a significant difference between the groups in mean scores that held up under cross validation was the Schizophrenia Scale (Sc). For Group I the mean score for the non-leaders was 56.94 and for the leaders 50.34, or a difference of 6.60 standard points. This difference is significant at the .05 level.

For Group II the mean score for the non-leaders was 56.79 and for the leaders 51.94, or a difference of 4.85. The t-value of 2.01 is barely significant at the .05 level of confidence. It may be assumed, therefore, that a true difference exists between the leaders and non-leaders on the Sc Scale for both groups. Since the Schizophrenia Scale measures the similarity of the subjects' responses to those of patients who are characterized by excessive seclusiveness, shyness, bizarre and unusual thoughts and behavior, it may be assumed that the mean scores point in the direction that non-leaders exhibit these schizophrenic tendencies more frequently than leaders.

In view of the results of the cross validation of items, it would seem that the scales of the MMPI would not hold up on cross validation. One explanation that may be given to account for the Pt and Sc scales standing up is that, even though most single items did not hold up, it may be that large groups of items that make up a scale are related to each other, and that each item added a little to the total score which was used as a basis of cross validation. Furthermore, the total scale score may give a more sensitive and more complete picture of leadership qualities than a single item that cross validated.

As pointed out earlier, Williamson and Hoyt¹ found men activity leaders holding "top campus positions" scored significantly higher than did freshmen on K, Hs, Hy, Mf, and Ma scales of the MMPI. In comparing the results of Williamson and Hoyt's study with the results relative to the scales of the MMPI in the present investigation, it is necessary to recall that two major differences exist in the experimental procedures employed. First, Williamson and Hoyt did not cross validate in their study. In the present investigation, out of the nine scales, two (Pt and Sc) held up on cross validation.

¹E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, XII, 65-78.

Second, Williamson and Hoyt's leaders and non-leaders had little in common except being enrolled in college. Their leaders were upper classmen holding "top campus positions," whereas their non-leaders were newly enrolled freshmen. In the present investigation the leaders and non-leaders were matched on five variables: (1) intelligence, (2) grade points, (3) sex, (4) school, and (5) classification, making for a tighter experimental design.

In view of the two major differences in experimental procedure, it would be difficult to make a comparison between the two investigations concerning the results of the scales of the MMPI. It may be that the results in the present study will take on new meaning when other college leadership studies are available.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

This investigation was performed for the purpose of following Williamson and Hoyt's¹ work with a study of social leadership as related to the MMPI that had a more rigorous control of variables in an attempt to do the following:

1. Pick the individual items of the MMPI which showed a significant difference in the response of male college social leaders and non-leaders in order to prepare a list of items that might be used in constructing a scale to predict college leadership.
2. Discover which of the designated scales of the MMPI, if any, showed a significant difference in the responses of leaders and non-leaders.

The subjects were sixty-nine male presidents of prominent campus organizations of a social nature. These sixty-nine presidents were designated the leaders in this investigation. In addition, sixty-nine subjects who had

¹E. B. Williamson and Donald Hoyt, "Measured Personality Characteristics of Student Leaders," Educational and Psychological Measurement, 1952, 65-78.

never held an elective office in campus organizations of a social nature were designated as non-leaders. Leaders and non-leaders were selected on the basis of information available from the office of the Dean of the school in which the student was enrolled or from the Dean of Men's Office.

Leaders and non-leaders filled out the MMPI. It was felt that the wide range of scales and individual items afforded by this test might reveal some significant personality differences between the leaders and the non-leaders. The purpose of the study was disguised to the subjects. The subjects were informed that the purpose of filling out the inventory was to further validate the test. It was felt that this study would be an improvement on the investigation of Williamson and Hoyt² if it had a more precise experimental design; i.e., a more rigorous control of variables. In an endeavor to achieve this end, thirty-five leaders were matched with thirty-five non-leaders on the following five variables: (1) intelligence, (2) grade points, (3) sex, (4) school, and (5) classification in school. This matched group of thirty-five leaders and thirty-five non-leaders was known as Group I. An additional thirty-four leaders and thirty-four non-leaders were matched on precisely the same five variables as Group I. These thirty-four leaders and thirty-four non-leaders were known as the cross-validation group, or Group II.

²Ibid.

Conclusions Regarding the Item Analysis

In an effort to discover the personality characteristics that make for college leadership, an attempt was made to pick out the individual items of the MMPI that significantly differentiated the leaders from the non-leaders. Consequently, the item analysis was divided into three parts. The steps that were observed in each of the three parts of the item analysis were described in detail previously (see Chapter III).

On the basis of the results of the three parts of the item analysis, it may be concluded that:

1. The keys developed for Part I of the item analysis on Groups I and II did not hold up on double cross-validation. It may be concluded that the leaders and non-leaders are very much alike in the way they responded to the items of the keys developed for Part I of the item analysis.
2. The "refined" keys developed for Part II of the item analysis on Groups I and II did not hold up on double cross validation. It may be concluded that the leaders and non-leaders are very much alike in the way they responded to the items of the "refined" keys developed for Part II of the item analysis.

3. For Part III of the item analysis, only fifteen of the 566 items of the MMPI with a P value of .10 or less cross validated in a given direction.
 - a. Seven of these fifteen items had a P value of .05 or less.
 - b. Eight of these fifteen items had a P value between .05 and .10 level.
 - c. The fifteen items are miscellaneous in character and too few in number to give a complete picture of leadership qualities. Three or four times as many items at better than the five per cent level of confidence are needed to build a reliable scale of social leadership.

Conclusions Regarding the Comparison of Scales of the MMPI

1. The most noteworthy finding in Table X³ is the marked similarity between the mean scores of the leaders and non-leaders in Groups I and II.⁴ The meaning of similar mean scores in terms of

³See Table X, Differences between Means of Scales of MMPI for Leaders and Non-leaders for Groups I and II, Chapter IV.

⁴The experimental procedures for comparing the scales of the MMPI were described in detail in Chapter III.

performances indicates that the two groups are very much alike in the way they responded to the items in the MMPI.

2. The Mf, Ma, and K scales scores are somewhat elevated; however, when the score for one group is elevated, the scores for the other group are about as high (Table X).
3. On the whole, the trend for the clinical scales is in the expected direction--that is, for greater maladjustment on the part of the non-leaders.
(Generally, the mean scores for the non-leaders are higher than the mean scores for the leaders in Groups I and II).
4. Only for the K Scale is the direction slightly reversed; that is, the leaders are slightly more maladjusted than non-leaders. The leaders may have a slightly more defensive test taking attitude than non-leaders because the leaders are more conscious of social expectancy (Table X).
5. It is interesting to note that for nine of the eleven scales the mean scores of the leaders and non-leaders are higher than the mean of the norm group (standard score of 50) given by the authors of the MMPI. Meehl and Hathaway⁵, in one

⁵P. E. Meehl and S. R. Hathaway, "The K Factor as a Suppressor Variable in the Minnesota Multiphasic Personality Inventory," Journal of Applied Psychology, 1946, XXX, 525-564.

explanation for these elevated mean scores, pointed out that the scales are correlated with educational level, college students tending on the average to make higher mean scores than that of the entire population (Table X).

6. The findings on two of the MMPI scales, the Psych-asthenia Scale and the Schizophrenia Scale, pointed in the direction of a significant difference between the groups in mean scores that appeared to hold up under cross validation.

Concluding Note

It is felt that the results of the present investigation will have more meaning when other college leadership studies are available. It is felt that further experimentation is needed to determine the proper definition of leadership that should be employed for securing items to measure leadership qualities. It is felt, furthermore, that additional investigation is needed on leadership that employs cross validation and matching procedures. Finally, it is felt that further study is needed on leadership that employs groups that are more homogeneous in social composition.

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APPENDIX

Booklet for the Minnesota

MULTIPHASIC PERSONALITY INVENTORY

STARKE R. HATHAWAY, Ph.D., and J. CHARNLEY McKINLEY, M.D.

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If a statement is TRUE or MOSTLY TRUE, as applied to you, blacken between the lines in the column headed T. (See A at the right.) If a statement is FALSE or NOT USUALLY TRUE, as applied to you, blacken between the lines in the column headed F. (See B at the right.) If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks on this booklet.

Remember, try to make some answer to every statement.

NOW OPEN THE BOOKLET AND GO AHEAD.

Section of answer sheet correctly marked

	T	F
A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DO NOT MAKE ANY MARKS ON THIS BOOKLET

1. I like mechanics magazines.
2. I have a good appetite.
3. I wake up fresh and rested most mornings.
4. I think I would like the work of a librarian.
5. I am easily awakened by noise.
6. I like to read newspaper articles on crime.
7. My hands and feet are usually warm enough.
8. My daily life is full of things that keep me interested.
9. I am about as able to work as I ever was.
10. There seems to be a lump in my throat much of the time.
11. A person should try to understand his dreams and be guided by or take warning from them.
12. I enjoy detective or mystery stories.
13. I work under a great deal of tension.
14. I have diarrhea once a month or more.
15. Once in a while I think of things too bad to talk about.
16. I am sure I get a raw deal from life.
17. My father was a good man.
18. I am very seldom troubled by constipation.
19. When I take a new job, I like to be tipped off on who should be gotten next to.
20. My sex life is satisfactory.
21. At times I have very much wanted to leave home.
22. At times I have fits of laughing and crying that I cannot control.
23. I am troubled by attacks of nausea and vomiting.
24. No one seems to understand me.
25. I would like to be a singer.
26. I feel that it is certainly best to keep my mouth shut when I'm in trouble.
27. Evil spirits possess me at times.
28. When someone does me a wrong I feel I should pay him back if I can, just for the principle of the thing.
29. I am bothered by acid stomach several times a week.
30. At times I feel like swearing.
31. I have nightmares every few nights.
32. I find it hard to keep my mind on a task or job.
33. I have had very peculiar and strange experiences.
34. I have a cough most of the time.
35. If people had not had it in for me I would have been much more successful.
36. I seldom worry about my health.
37. I have never been in trouble because of my sex behavior.
38. During one period when I was a youngster I engaged in petty thievery.
39. At times I feel like smashing things.
40. Most any time I would rather sit and daydream than to do anything else.
41. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
42. My family does not like the work I have chosen (or the work I intend to choose for my life work).
43. My sleep is fitful and disturbed.
44. Much of the time my head seems to hurt all over.
45. I do not always tell the truth.

GO ON TO THE NEXT PAGE

46. My judgment is better than it ever was.
47. Once a week or oftener I feel suddenly hot all over, without apparent cause.
48. When I am with people I am bothered by hearing very queer things.
49. It would be better if almost all laws were thrown away.
50. My soul sometimes leaves my body.
51. I am in just as good physical health as most of my friends.
52. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.
53. A minister can cure disease by praying and putting his hand on your head.
54. I am liked by most people who know me.
55. I am almost never bothered by pains over the heart or in my chest.
56. As a youngster I was suspended from school one or more times for cutting up.
57. I am a good mixer.
58. Everything is turning out just like the prophets of the Bible said it would.
59. I have often had to take orders from someone who did not know as much as I did.
60. I do not read every editorial in the newspaper every day.
61. I have not lived the right kind of life.
62. Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep."
63. I have had no difficulty in starting or holding my bowel movement.
64. I sometimes keep on at a thing until others lose their patience with me.
65. I loved my father.
66. I see things or animals or people around me that others do not see.
67. I wish I could be as happy as others seem to be.
68. I hardly ever feel pain in the back of the neck.
69. I am very strongly attracted by members of my own sex.
70. I used to like drop-the-handkerchief.
71. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.
72. I am troubled by discomfort in the pit of my stomach every few days or oftener.
73. I am an important person.
74. I have often wished I were a girl. (Or if you are a girl) I have never been sorry that I am a girl.
75. I get angry sometimes.
76. Most of the time I feel blue.
77. I enjoy reading love stories.
78. I like poetry.
79. My feelings are not easily hurt.
80. I sometimes tease animals.
81. I think I would like the kind of work a forest ranger does.
82. I am easily downed in an argument.
83. Any man who is able and willing to work hard has a good chance of succeeding.
84. These days I find it hard not to give up hope of amounting to something.
85. Sometimes I am strongly attracted by the personal articles of others such as shoes, gloves, etc., so that I want to handle or steal them though I have no use for them.
86. I am certainly lacking in self-confidence.
87. I would like to be a florist.
88. I usually feel that life is worth while.
89. It takes a lot of argument to convince most people of the truth.

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90. Once in a while I put off until tomorrow what I ought to do today.
91. I do not mind being made fun of.
92. I would like to be a nurse.
93. I think most people would lie to get ahead.
94. I do many things which I regret afterwards (I regret things more or more often than others seem to).
95. I go to church almost every week.
96. I have very few quarrels with members of my family.
97. At times I have a strong urge to do something harmful or shocking.
98. I believe in the second coming of Christ.
99. I like to go to parties and other affairs where there is lots of loud fun.
100. I have met problems so full of possibilities that I have been unable to make up my mind about them.
101. I believe women ought to have as much sexual freedom as men.
102. My hardest battles are with myself.
103. I have little or no trouble with my muscles twitching or jumping.
104. I don't seem to care what happens to me.
105. Sometimes when I am not feeling well I am cross.
106. Much of the time I feel as if I have done something wrong or evil.
107. I am happy most of the time.
108. There seems to be a fullness in my head or nose most of the time.
109. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
110. Someone has it in for me.
111. I have never done anything dangerous for the thrill of it.
112. I frequently find it necessary to stand up for what I think is right.
113. I believe in law enforcement.
114. Often I feel as if there were a tight band about my head.
115. I believe in a life hereafter.
116. I enjoy a race or game better when I bet on it.
117. Most people are honest chiefly through fear of being caught.
118. In school I was sometimes sent to the principal for cutting up.
119. My speech is the same as always (not faster or slower, or slurring; no hoarseness).
120. My table manners are not quite as good at home as when I am out in company.
121. I believe I am being plotted against.
122. I seem to be about as capable and smart as most others around me.
123. I believe I am being followed.
124. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.
125. I have a great deal of stomach trouble.
126. I like dramatics.
127. I know who is responsible for most of my troubles.
128. The sight of blood neither frightens me nor makes me sick.
129. Often I can't understand why I have been so cross and grouchy.
130. I have never vomited blood or coughed up blood.
131. I do not worry about catching diseases.

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132. I like collecting flowers or growing house plants.
133. I have never indulged in any unusual sex practices.
134. At times my thoughts have raced ahead faster than I could speak them.
135. If I could get into a movie without paying and be sure I was not seen I would probably do it.
136. I commonly wonder what hidden reason another person may have for doing something nice for me.
137. I believe that my home life is as pleasant as that of most people I know.
138. Criticism or scolding hurts me terribly.
139. Sometimes I feel as if I must injure either myself or someone else.
140. I like to cook.
141. My conduct is largely controlled by the customs of those about me.
142. I certainly feel useless at times.
143. When I was a child, I belonged to a crowd or gang that tried to stick together through thick and thin.
144. I would like to be a soldier.
145. At times I feel like picking a fist fight with someone.
146. I have the wanderlust and am never happy unless I am roaming or traveling about.
147. I have often lost out on things because I couldn't make up my mind soon enough.
148. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
149. I used to keep a diary.
150. I would rather win than lose in a game.
151. Someone has been trying to poison me.
152. Most nights I go to sleep without thoughts or ideas bothering me.
153. During the past few years I have been well most of the time.
154. I have never had a fit or convulsion.
155. I am neither gaining nor losing weight.
156. I have had periods in which I carried on activities without knowing later what I had been doing.
157. I feel that I have often been punished without cause.
158. I cry easily.
159. I cannot understand what I read as well as I used to.
160. I have never felt better in my life than I do now.
161. The top of my head sometimes feels tender.
162. I resent having anyone take me in so cleverly that I have had to admit that it was one on me.
163. I do not tire quickly.
164. I like to study and read about things that I am working at.
165. I like to know some important people because it makes me feel important.
166. I am afraid when I look down from a high place.
167. It wouldn't make me nervous if any members of my family got into trouble with the law.
168. There is something wrong with my mind.
169. I am not afraid to handle money.
170. What others think of me does not bother me.
171. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.
172. I frequently have to fight against showing that I am bashful.
173. I liked school.

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174. I have never had a fainting spell.
175. I seldom or never have dizzy spells.
176. I do not have a great fear of snakes.
177. My mother was a good woman.
178. My memory seems to be all right.
179. I am worried about sex matters.
180. I find it hard to make talk when I meet new people.
181. When I get bored I like to stir up some excitement.
182. I am afraid of losing my mind.
183. I am against giving money to beggars.
184. I commonly hear voices without knowing where they come from.
185. My hearing is apparently as good as that of most people.
186. I frequently notice my hand shakes when I try to do something.
187. My hands have not become clumsy or awkward.
188. I can read a long while without tiring my eyes.
189. I feel weak all over much of the time.
190. I have very few headaches.
191. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.
192. I have had no difficulty in keeping my balance in walking.
193. I do not have spells of hay fever or asthma.
194. I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me.
195. I do not like everyone I know.
196. I like to visit places where I have never been before.
197. Someone has been trying to rob me.
198. I daydream very little.
199. Children should be taught all the main facts of sex.
200. There are persons who are trying to steal my thoughts and ideas.
201. I wish I were not so shy.
202. I believe I am a condemned person.
203. If I were a reporter I would very much like to report news of the theater.
204. I would like to be a journalist.
205. At times it has been impossible for me to keep from stealing or shoplifting something.
206. I am very religious (more than most people).
207. I enjoy many different kinds of play and recreation.
208. I like to flirt.
209. I believe my sins are unpardonable.
210. Everything tastes the same.
211. I can sleep during the day but not at night.
212. My people treat me more like a child than a grown-up.
213. In walking I am very careful to step over sidewalk cracks.
214. I have never had any breaking out on my skin that has worried me.
215. I have used alcohol excessively.
216. There is very little love and companionship in my family as compared to other homes.
217. I frequently find myself worrying about something.
218. It does not bother me particularly to see animals suffer.
219. I think I would like the work of a building contractor.

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220. I loved my mother.
221. I like science.
222. It is not hard for me to ask help from my friends even though I cannot return the favor.
223. I very much like hunting.
224. My parents have often objected to the kind of people I went around with.
225. I gossip a little at times.
226. Some of my family have habits that bother and annoy me very much.
227. I have been told that I walk during sleep.
228. At times I feel that I can make up my mind with unusually great ease.
229. I should like to belong to several clubs or lodges.
230. I hardly ever notice my heart pounding and I am seldom short of breath.
231. I like to talk about sex.
232. I have been inspired to a program of life based on duty which I have since carefully followed.
233. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.
234. I get mad easily and then get over it soon.
235. I have been quite independent and free from family rule.
236. I brood a great deal.
237. My relatives are nearly all in sympathy with me.
238. I have periods of such great restlessness that I cannot sit long in a chair.
239. I have been disappointed in love.
240. I never worry about my looks.
241. I dream frequently about things that are best kept to myself.
242. I believe I am no more nervous than most others.
243. I have few or no pains.
244. My way of doing things is apt to be misunderstood by others.
245. My parents and family find more fault with me than they should.
246. My neck spots with red often.
247. I have reason for feeling jealous of one or more members of my family.
248. Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."
249. I believe there is a Devil and a Hell in afterlife.
250. I don't blame anyone for trying to grab everything he can get in this world.
251. I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
252. No one cares much what happens to you.
253. I can be friendly with people who do things which I consider wrong.
254. I like to be with a crowd who play jokes on one another.
255. Sometimes at elections I vote for men about whom I know very little.
256. The only interesting part of newspapers is the "funnies."
257. I usually expect to succeed in things I do.
258. I believe there is a God.
259. I have difficulty in starting to do things.
260. I was a slow learner in school.
261. If I were an artist I would like to draw flowers.
262. It does not bother me that I am not better looking.
263. I sweat very easily even on cool days.

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64. I am entirely self-confident.
65. It is safer to trust nobody.
66. Once a week or oftener I become very excited.
67. When in a group of people I have trouble thinking of the right things to talk about.
68. Something exciting will almost always pull me out of it when I am feeling low.
69. I can easily make other people afraid of me, and sometimes do for the fun of it.
70. When I leave home I do not worry about whether the door is locked and the windows closed.
71. I do not blame a person for taking advantage of someone who lays himself open to it.
72. At times I am all full of energy.
73. I have numbness in one or more regions of my skin.
74. My eyesight is as good as it has been for years.
75. Someone has control over my mind.
76. I enjoy children.
77. At times I have been so entertained by the cleverness of a crook that I have hoped he would get by with it.
78. I have often felt that strangers were looking at me critically.
79. I drink an unusually large amount of water every day.
80. Most people make friends because friends are likely to be useful to them.
81. I do not often notice my ears ringing or buzzing.
82. Once in a while I feel hate toward members of my family whom I usually love.
83. If I were a reporter I would very much like to report sporting news.
84. I am sure I am being talked about.
85. Once in a while I laugh at a dirty joke.
286. I am never happier than when alone.
287. I have very few fears compared to my friends.
288. I am troubled by attacks of nausea and vomiting.
289. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
290. I work under a great deal of tension.
291. At one or more times in my life I felt that someone was making me do things by hypnotizing me.
292. I am likely not to speak to people until they speak to me.
293. Someone has been trying to influence my mind.
294. I have never been in trouble with the law.
295. I liked "Alice in Wonderland" by Lewis Carroll.
296. I have periods in which I feel unusually cheerful without any special reason.
297. I wish I were not bothered by thoughts about sex.
298. If several people find themselves in trouble, the best thing for them to do is to agree upon a story and stick to it.
299. I think that I feel more intensely than most people do.
300. There never was a time in my life when I liked to play with dolls.
301. Life is a strain for me much of the time.
302. I have never been in trouble because of my sex behavior.
303. I am so touchy on some subjects that I can't talk about them.
304. In school I found it very hard to talk before the class.
305. Even when I am with people I feel lonely much of the time.
306. I get all the sympathy I should.

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307. I refuse to play some games because I am not good at them.
308. At times I have very much wanted to leave home.
309. I seem to make friends about as quickly as others do.
310. My sex life is satisfactory.
311. During one period when I was a youngster I engaged in petty thievery.
312. I dislike having people about me.
313. The man who provides temptation by leaving valuable property unprotected is about as much to blame for its theft as the one who steals it.
314. Once in a while I think of things too bad to talk about.
315. I am sure I get a raw deal from life.
316. I think nearly anyone would tell a lie to keep out of trouble.
317. I am more sensitive than most other people.
318. My daily life is full of things that keep me interested.
319. Most people inwardly dislike putting themselves out to help other people.
320. Many of my dreams are about sex matters.
321. I am easily embarrassed.
322. I worry over money and business.
323. I have had very peculiar and strange experiences.
324. I have never been in love with anyone.
325. The things that some of my family have done have frightened me.
326. At times I have fits of laughing and crying that I cannot control.
327. My mother or father often made me obey even when I thought that it was unreasonable.
328. I find it hard to keep my mind on a task or job.
329. I almost never dream.
330. I have never been paralyzed or had any unusual weakness of any of my muscles.
331. If people had not had it in for me I would have been much more successful.
332. Sometimes my voice leaves me or changes even though I have no cold.
333. No one seems to understand me.
334. Peculiar odors come to me at times.
335. I cannot keep my mind on one thing.
336. I easily become impatient with people.
337. I feel anxiety about something or someone almost all the time.
338. I have certainly had more than my share of things to worry about.
339. Most of the time I wish I were dead.
340. Sometimes I become so excited that I find it hard to get to sleep.
341. At times I hear so well it bothers me.
342. I forget right away what people say to me.
343. I usually have to stop and think before I act even in trifling matters.
344. Often I cross the street in order not to meet someone I see.
345. I often feel as if things were not real.
346. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
347. I have no enemies who really wish to harm me.
348. I tend to be on my guard with people who are somewhat more friendly than I had expected.
349. I have strange and peculiar thoughts.
350. I hear strange things when I am alone.
351. I get anxious and upset when I have to make a short trip away from home.

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352. I have been afraid of things or people that I knew could not hurt me.
353. I have no dread of going into a room by myself where other people have already gathered and are talking.
354. I am afraid of using a knife or anything very sharp or pointed.
355. Sometimes I enjoy hurting persons I love.
356. I have more trouble concentrating than others seem to have.
357. I have several times given up doing a thing because I thought too little of my ability.
358. Bad words, often terrible words, come into my mind and I cannot get rid of them.
359. Sometimes some unimportant thought will run through my mind and bother me for days.
360. Almost every day something happens to frighten me.
361. I am inclined to take things hard.
362. I am more sensitive than most other people.
363. At times I have enjoyed being hurt by someone I loved.
364. People say insulting and vulgar things about me.
365. I feel uneasy indoors.
366. Even when I am with people I feel lonely much of the time.
367. I am not afraid of fire.
368. I have sometimes stayed away from another person because I feared doing or saying something that I might regret afterwards.
369. Religion gives me no worry.
370. I hate to have to rush when working.
371. I am not unusually self-conscious.
372. I tend to be interested in several different hobbies rather than to stick to one of them for a long time.

373. I feel sure that there is only one true religion.
374. At periods my mind seems to work more slowly than usual.
375. When I am feeling very happy and active, someone who is blue or low will spoil it all.
376. Policemen are usually honest.
377. At parties I am more likely to sit by myself or with just one other person than to join in with the crowd.
378. I do not like to see women smoke.
379. I very seldom have spells of the blues.
380. When someone says silly or ignorant things about something I know about, I try to set him right.
381. I am often said to be hotheaded.
382. I wish I could get over worrying about things I have said that may have injured other people's feelings.
383. People often disappoint me.
384. I feel unable to tell anyone all about myself.
385. Lightning is one of my fears.
386. I like to keep people guessing what I'm going to do next.
387. The only miracles I know of are simply tricks that people play on one another.
388. I am afraid to be alone in the dark.
389. My plans have frequently seemed so full of difficulties that I have had to give them up.
390. I have often felt badly over being misunderstood when trying to keep someone from making a mistake.
391. I love to go to dances.
392. A windstorm terrifies me.
393. Horses that don't pull should be beaten or kicked.
394. I frequently ask people for advice.

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395. The future is too uncertain for a person to make serious plans.
396. Often, even though everything is going fine for me, I feel that I don't care about anything.
397. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
398. I often think, "I wish I were a child again."
399. I am not easily angered.
400. If given the chance I could do some things that would be of great benefit to the world.
401. I have no fear of water.
402. I often must sleep over a matter before I decide what to do.
403. It is great to be living in these times when so much is going on.
404. People have often misunderstood my intentions when I was trying to put them right and be helpful.
405. I have no trouble swallowing.
406. I have often met people who were supposed to be experts who were no better than I.
407. I am usually calm and not easily upset.
408. I am apt to hide my feelings in some things, to the point that people may hurt me without their knowing about it.
409. At times I have worn myself out by undertaking too much.
410. I would certainly enjoy beating a crook at his own game.
411. It makes me feel like a failure when I hear of the success of someone I know well.
412. I do not dread seeing a doctor about a sickness or injury.
413. I deserve severe punishment for my sins.
414. I am apt to take disappointments so keenly that I can't put them out of my mind.
415. If given the chance I would make a good leader of people.
416. It bothers me to have someone watch me at work even though I know I can do it well.
417. I am often so annoyed when someone tries to get ahead of me in a line of people that I speak to him about it.
418. At times I think I am no good at all.
419. I played hooky from school quite often as a youngster.
420. I have had some very unusual religious experiences.
421. One or more members of my family is very nervous.
422. I have felt embarrassed over the type of work that one or more members of my family have done.
423. I like or have liked fishing very much.
424. I feel hungry almost all the time.
425. I dream frequently.
426. I have at times had to be rough with people who were rude or annoying.
427. I am embarrassed by dirty stories.
428. I like to read newspaper editorials.
429. I like to attend lectures on serious subjects.
430. I am attracted by members of the opposite sex.
431. I worry quite a bit over possible misfortunes.
432. I have strong political opinions.
433. I used to have imaginary companions.
434. I would like to be an auto racer.
435. Usually I would prefer to work with women.
436. People generally demand more respect for their own rights than they are willing to allow for others.

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7. It is all right to get around the law if you don't actually break it.
8. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done.
9. It makes me nervous to have to wait.
0. I try to remember good stories to pass them on to other people.
1. I like tall women.
2. I have had periods in which I lost sleep over worry.
3. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.
4. I do not try to correct people who express an ignorant belief.
5. I was fond of excitement when I was young (or in childhood).
6. I enjoy gambling for small stakes.
7. I am often inclined to go out of my way to win a point with someone who has opposed me.
8. I am bothered by people outside, on streetcars, in stores, etc., watching me.
9. I enjoy social gatherings just to be with people.
0. I enjoy the excitement of a crowd.
1. My worries seem to disappear when I get into a crowd of lively friends.
2. I like to poke fun at people.
3. When I was a child I didn't care to be a member of a crowd or gang.
4. I could be happy living all alone in a cabin in the woods or mountains.
5. I am quite often not in on the gossip and talk of the group I belong to.
6. A person shouldn't be punished for breaking a law that he thinks is unreasonable.

457. I believe that a person should never taste an alcoholic drink.
458. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.
459. I have one or more bad habits which are so strong that it is no use in fighting against them.
460. I have used alcohol moderately (or not at all).
461. I find it hard to set aside a task that I have undertaken, even for a short time.
462. I have had no difficulty starting or holding my urine.
463. I used to like hopscotch.
464. I have never seen a vision.
465. I have several times had a change of heart about my life work.
466. Except by a doctor's orders I never take drugs or sleeping powders.
467. I often memorize numbers that are not important (such as automobile licenses, etc.).
468. I am often sorry because I am so cross and grouchy.
469. I have often found people jealous of my good ideas, just because they had not thought of them first.
470. Sexual things disgust me.
471. In school my marks in deportment were quite regularly bad.
472. I am fascinated by fire.
473. Whenever possible I avoid being in a crowd.
474. I have to urinate no more often than others.
475. When I am cornered I tell that portion of the truth which is not likely to hurt me.
476. I am a special agent of God.
477. If I were in trouble with several friends who were equally to blame, I would rather take the whole blame than to give them away.

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478. I have never been made especially nervous over trouble that any members of my family have gotten into.
479. I do not mind meeting strangers.
480. I am often afraid of the dark.
481. I can remember "playing sick" to get out of something.
482. While in trains, busses, etc., I often talk to strangers.
483. Christ performed miracles such as changing water into wine.
484. I have one or more faults which are so big that it seems better to accept them and try to control them rather than to try to get rid of them.
485. When a man is with a woman he is usually thinking about things related to her sex.
486. I have never noticed any blood in my urine.
487. I feel like giving up quickly when things go wrong.
488. I pray several times every week.
489. I feel sympathetic towards people who tend to hang on to their griefs and troubles.
490. I read in the Bible several times a week.
491. I have no patience with people who believe there is only one true religion.
492. I dread the thought of an earthquake.
493. I prefer work which requires close attention, to work which allows me to be careless.
494. I am afraid of finding myself in a closet or small closed place.
495. I usually "lay my cards on the table" with people that I am trying to correct or improve.
496. I have never seen things doubled (that is, an object never looks like two objects to me without my being able to make it look like one object).
497. I enjoy stories of adventure.
498. It is always a good thing to be frank.
499. I must admit that I have at times been worried beyond reason over something that really did not matter.
500. I readily become one hundred per cent sold on a good idea.
501. I usually work things out for myself rather than get someone to show me how.
502. I like to let people know where I stand on things.
503. It is unusual for me to express strong approval or disapproval of the actions of others.
504. I do not try to cover up my poor opinion or pity of a person so that he won't know how I feel.
505. I have had periods when I felt so full of pep that sleep did not seem necessary for days at a time.
506. I am a high-strung person.
507. I have frequently worked under people who seem to have things arranged so that they get credit for good work but are able to pass off mistakes onto those under them.
508. I believe my sense of smell is as good as other people's.
509. I sometimes find it hard to stick up for my rights because I am so reserved.
510. Dirt frightens or disgusts me.
511. I have a daydream life about which I do not tell other people.
512. I dislike to take a bath.
513. I think Lincoln was greater than Washington.
514. I like mannish women.
515. In my home we have always had the ordinary necessities (such as enough food, clothing, etc.).
516. Some of my family have quick tempers.

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17. I cannot do anything well.
18. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
19. There is something wrong with my sex organs.
20. I strongly defend my own opinions as a rule.
21. In a group of people I would not be embarrassed to be called upon to start a discussion or give an opinion about something I know well.
22. I have no fear of spiders.
23. I practically never blush.
24. I am not afraid of picking up a disease or germs from door knobs.
25. I am made nervous by certain animals.
26. The future seems hopeless to me.
27. The members of my family and my close relatives get along quite well.
28. I blush no more often than others.
29. I would like to wear expensive clothes.
30. I am often afraid that I am going to blush.
31. People can pretty easily change me even though I thought that my mind was already made up on a subject.
32. I can stand as much pain as others can.
33. I am not bothered by a great deal of belching of gas from my stomach.
34. Several times I have been the last to give up trying to do a thing.
35. My mouth feels dry almost all the time.
36. It makes me angry to have people hurry me.
37. I would like to hunt lions in Africa.
38. I think I would like the work of a dressmaker.
39. I am not afraid of mice.
40. My face has never been paralyzed.
41. My skin seems to be unusually sensitive to touch.
42. I have never had any black, tarry-looking bowel movements.
43. Several times a week I feel as if something dreadful is about to happen.
44. I feel tired a good deal of the time.
45. Sometimes I have the same dream over and over.
46. I like to read about history.
47. I like parties and socials.
48. I never attend a sexy show if I can avoid it.
49. I shrink from facing a crisis or difficulty.
50. I like repairing a door latch.
51. Sometimes I am sure that other people can tell what I am thinking.
52. I like to read about science.
53. I am afraid of being alone in a wide-open place.
54. If I were an artist I would like to draw children.
55. I sometimes feel that I am about to go to pieces.

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556. I am very careful about my manner of dress.

557. I would like to be a private secretary.

558. A large number of people are guilty of bad sexual conduct.

559. I have often been frightened in the middle of the night.

560. I am greatly bothered by forgetting where I put things.

561. I very much like horseback riding.

562. The one to whom I was most attached and whom I most admired as a child was a woman. (Mother, sister, aunt, or other woman.)

563. I like adventure stories better than romantic stories.

564. I am apt to pass up something I want to do when others feel that it isn't worth doing.

565. I feel like jumping off when I am on a high place.

566. I like movie love scenes.

TABLE B-1

THE MATCHING OF LEADERS AND NON-LEADERS
OF GROUP I ON ACE SCORES

Leaders			Non-Leaders		
Subjects	Scores (x)	(x ²)	Subjects	Scores (x)	(x ²)
S1	139	19321	S1	109	11881
S2	110	12100	S2	115	13225
S3	128	16384	S3	120	14400
S4	93	8649	S4	102	10404
S5	103	10609	S5	93	8649
S6	105	11025	S6	109	11881
S7	76	5776	S7	100	10000
S8	114	12996	S8	111	12321
S9	96	9216	S9	88	7744
S10	92	8464	S10	120	14400
S11	126	15876	S11	107	11449
S12	109	11881	S12	103	10609
S13	127	16129	S13	105	11025
S14	87	7569	S14	114	12996
S15	90	8100	S15	119	14161
S16	125	15625	S16	92	8464
S17	99	9801	S17	93	8649
S18	117	13689	S18	109	11881
S19	85	7225	S19	85	7225
S20	132	17424	S20	73	5329
S21	89	7921	S21	135	18225
S22	74	5476	S22	80	6400
S23	79	6241	S23	108	11664
S24	115	13225	S24	120	14400
S25	89	7921	S25	133	17689
S26	101	10201	S26	95	9025
S27	111	12321	S27	109	11881
S28	125	15625	S28	124	15376
S29	110	12100	S29	110	12100
S30	113	12769	S30	118	13924
S31	147	21609	S31	124	15376
S32	105	11025	S32	81	6561
S33	114	12996	S33	114	12996
S34	120	14400	S34	122	14884
S35	72	5184	S35	73	5329
Totals	3717	406873		3713	402523

$$M = 106.20$$

$$M = 106.08$$

TABLE B-2

THE MATCHING OF LEADERS AND NON-LEADERS
OF GROUP II ON ACE SCORES

Leaders			Non-Leaders		
Subjects	Scores (x)	(x ²)	Subjects	Scores (x)	(x ²)
S1	89	7921	S1	90	8100
S2	116	13456	S2	109	11881
S3	106	11236	S3	104	10816
S4	83	6889	S4	85	7225
S5	83	6889	S5	85	7225
S6	97	9409	S6	97	9409
S7	60	3600	S7	70	4900
S8	75	5625	S8	71	5041
S9	69	4761	S9	63	3969
S10	111	12321	S10	110	12100
S11	163	26569	S11	149	22201
S12	102	10404	S12	103	10609
S13	125	15625	S13	124	15376
S14	118	13924	S14	121	14641
S15	103	10609	S15	106	11236
S16	130	16900	S16	136	18496
S17	55	3025	S17	108	11664
S18	76	5776	S18	85	7225
S19	86	7396	S19	86	7396
S20	101	10201	S20	100	10000
S21	95	9025	S21	92	8464
S22	141	19881	S22	142	20164
S23	110	12100	S23	107	11449
S24	150	22500	S24	150	22500
S25	100	10000	S25	91	8281
S26	100	10000	S26	102	10404
S27	116	13456	S27	55	3025
S28	109	11881	S28	104	10816
S29	92	8464	S29	82	6724
S30	126	15876	S30	136	18496
S31	112	12544	S31	118	13924
S32	95	9025	S32	92	8464
S33	94	8836	S33	89	7921
S34	88	7744	S34	89	7921
Totals	3476	373868		3451	368063

M = 102.23

M = 101.50

TABLE B-3

THE MATCHING OF LEADERS AND NON-LEADERS
OF GROUP I ON GRADE POINT AVERAGE

Leaders			Non-Leaders		
Subjects	Scores (x)	(x ²)	Subjects	Scores (x)	(x ²)
S1	2.94	8.6436	S1	2.02	4.0864
S2	2.63	6.9169	S2	2.07	4.2849
S3	3.73	13.9129	S3	2.00	4.0000
S4	2.82	7.9524	S4	2.90	8.4100
S5	2.45	6.0025	S5	3.54	12.5316
S6	3.24	10.4976	S6	2.62	6.8644
S7	1.95	3.8025	S7	3.23	10.4329
S8	2.95	8.7025	S8	1.97	3.8809
S9	2.17	4.7089	S9	1.66	2.7556
S10	2.05	4.2025	S10	2.74	7.6076
S11	3.12	9.7344	S11	2.84	8.0656
S12	2.56	6.5536	S12	2.00	4.0000
S13	2.35	5.5225	S13	2.24	5.0176
S14	2.48	6.1504	S14	2.06	4.2436
S15	1.58	2.4964	S15	2.40	5.7600
S16	2.26	5.1076	S16	3.52	12.3904
S17	2.88	8.2944	S17	3.03	9.1809
S18	3.52	12.3904	S18	2.75	7.5625
S19	2.30	5.2900	S19	3.91	15.2881
S20	3.93	15.4449	S20	3.17	10.0489
S21	3.58	12.8164	S21	2.61	6.8121
S22	2.49	6.2001	S22	2.12	4.4944
S23	2.23	4.9729	S23	2.12	4.4944
S24	2.86	8.1796	S24	2.58	6.6564
S25	2.86	8.1796	S25	1.06	1.1236
S26	2.22	4.9284	S26	2.39	5.7121
S27	2.15	4.6225	S27	2.93	8.5849
S28	3.45	11.9025	S28	3.61	13.0321
S29	2.74	7.5076	S29	2.13	4.5369
S30	1.79	3.2041	S30	2.70	7.2900
S31	2.11	4.4521	S31	2.82	7.9524
S32	2.76	7.6176	S32	3.16	9.9856
S33	2.09	4.3681	S33	2.31	5.3361
S34	2.53	6.4009	S34	2.88	8.2944
S35	2.18	4.7524	S35	2.96	8.7616
Totals	91.95	252.4317		91.05	249.4789

$$M = 2.63$$

$$M = 2.60$$

TABLE B-4

THE MATCHING OF LEADERS AND NON-LEADERS
OF GROUP II ON GRADE POINT AVERAGE

Leaders			Non-Leaders		
Subjects	Scores (x)	(x ²)	Subjects	Scores (x)	(x ²)
S1	2.82	7.9524	S1	2.48	6.1504
S2	1.85	3.4225	S2	3.01	9.0601
S3	3.17	10.0489	S3	3.12	9.7344
S4	2.25	5.0625	S4	3.88	15.0544
S5	3.20	10.2400	S5	1.89	3.5721
S6	1.93	3.7249	S6	2.83	8.0089
S7	2.85	8.1225	S7	2.93	8.5849
S8	3.12	9.7344	S8	2.16	4.6656
S9	2.00	4.0000	S9	2.41	5.8081
S10	2.78	7.7284	S10	2.38	5.6644
S11	3.28	10.7584	S11	2.76	7.6176
S12	2.38	5.6644	S12	2.23	4.9729
S13	2.39	5.7121	S13	2.78	7.7284
S14	1.83	3.3489	S14	2.41	5.8081
S15	2.74	7.5076	S15	3.56	12.6736
S16	3.03	9.1809	S16	2.50	6.2500
S17	2.11	4.4521	S17	2.41	5.8081
S18	2.87	8.2369	S18	2.31	5.3361
S19	3.17	10.0489	S19	2.98	8.8804
S20	2.71	7.3441	S20	2.13	4.5369
S21	1.77	3.1329	S21	1.65	2.7225
S22	3.89	15.1321	S22	2.50	6.2500
S23	1.88	3.5344	S23	2.47	6.1009
S24	3.10	9.6100	S24	1.36	1.8496
S25	2.58	6.6564	S25	1.53	2.3409
S26	2.62	6.8644	S26	2.47	6.1009
S27	2.83	8.0089	S27	2.13	4.5369
S28	3.07	9.4249	S28	2.20	4.8400
S29	1.81	3.2761	S29	1.90	3.6100
S30	3.59	12.8881	S30	3.05	9.3025
S31	3.42	11.6964	S31	3.25	10.5625
S32	2.53	6.4049	S32	2.27	5.1529
S33	2.65	7.0225	S33	3.23	10.4329
S34	3.01	9.0601	S34	1.61	2.5921
	91.23	255.0029		84.78	222.3100

M = 2.69

M = 2.49

TABLE B-5¹

ITEMS OF THE MMPI WITH P VALUES OF .10 OR LESS THAT CROSS VALIDATED
IN A GIVEN DIRECTION FOR GROUPS I AND II

P Values Equal .05 or Less			True Responses for Groups I and II Leaders and Non-Leaders ²		
Item	Group I	Group II	Item	Group I	Group II
17	2.45	2.30	* 17	35-32	34-31
23	2.04	2.01	** 23	0-2	0-2
249	3.20	2.01	**249	15-28	21-28
311	2.04	2.76	**311	9-17	9-20
318	2.39	3.04	*318	34-28	34-29
362	2.92	2.30	*362	8-1	8-5
483	2.62	2.13	**483	23-32	23-30
P Values Between .05 and .10					
54	1.81	1.72	* 54	35-33	34-32
192	2.62	1.84	**192	32-35	32-34

¹See Chapter III for a detailed description of the steps taken to pick out the above items.

²The number of true responses for the leaders are first presented; then the number of true responses for the non-leaders are presented for Groups I and II.

*Items preceded by an asterisk show items that cross validated in the direction of leaders.

**Items preceded by two asterisks show items that cross validated in the direction of non-leaders.

TABLE B-5--Continued

P Values Between .05 and .10			True Responses for Groups I and II Leaders and Non-Leaders		
Item	Group I	Group II	Item	Group I	Group II
258	2.62	1.90	**258	32-35	32-34
297	1.87	2.87	**297	2-7	4-5
304	3.21	1.69	**304	4-15	10-15
344	2.39	1.84	**344	0-3	1-4
356	2.16	1.78	**356	2-8	3-8
560	1.69	1.78	*560	8-3	14-7

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