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AN ANALYSIS  
of  
PERSONALITY CHARACTERISTICS OF "DROP OUT" STUDENTS  
at  
MONTANA STATE UNIVERSITY

by

ANNA JEAN HANSON

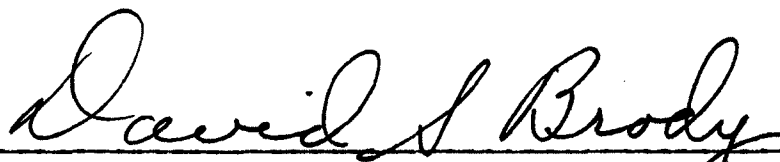
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1951

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## CHAPTER I

### INTRODUCTION

One of the primary problems facing college administrators is an appraisal of factors accounting for student mortality. The extent and seriousness of this problem is indicated by Bird's comment that "of the many thousands of young people who enter college only a minority are actually entitled to believe that they will graduate within the usually allotted four years."<sup>1</sup> This raises serious questions about the effective utilization of our educational resources, for it means that in the case of a great many young people there has been time, money, and effort wasted. Certainly an essential first step is a study of the problem of mortality itself.

To what extent does the university have an obligation to an entering student or to a student who is failing in his work? In many cases a student erroneously assumes that once he is accepted by a college he has the necessary qualifications to succeed in academic work. The student may also fail to take into account his personal motives and the highly competitive nature of college work. If the primary concern of a university is only with the academic progress of its students,

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<sup>1</sup>C. Bird and D. Bird, Learning More by Effective Study, (New York: D. Appleton-Century Company, Inc., 1945), p. 237.



the position may be taken that student mortality is relatively unimportant. That is, it may be assumed that the important consideration is the maintenance of high scholastic standards. However, one may in turn raise a question about the large number of students who are capable of doing satisfactory work in college and yet fail to meet the requirements for graduation. It would appear that universities cannot divorce themselves completely from the problem of student mortality and that they do have some obligation to students once they have been admitted for entrance.

The problem of student mortality is also related to the entrance standards and the requirements for graduation set up by a particular college. As students differ in their abilities so colleges differ in their methods of selecting and admitting students. Some colleges will admit any high school graduate, whereas others have very rigid entrance requirements. In addition, colleges will differ in their standards for graduation. Thus, while a student may be unable to succeed in one school, he may have the ability to succeed in a different school.

## CHAPTER II

### REVIEW OF THE LITERATURE

One of the difficulties encountered in an analysis of student mortality is the fact that very little research in this area has been undertaken. The most thorough-going survey yet reported in the literature is that made by McNeely.<sup>1</sup> His study was based on a class of entering freshman students for the academic year 1931-32 in the different colleges and schools at each of twenty-five universities. It will be noted that this study was completed about fifteen years ago and there may be some question as to whether the findings would be appropriate for an entering class of 1950. However, the results are of significance in indicating the extent of the problem and the difficulties encountered in making such a study. Since this research provides one of the most important sources of information on student mortality, it will be cited in some detail.

McNeely defines student mortality as "the failure of students to remain in college until graduation."<sup>2</sup> There are

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<sup>1</sup>McNeely, J. H., "College Student Mortality", United States Department of the Interior, Public Affairs Bulletin 11, 1937.

<sup>2</sup>Ibid., p. 1.

two kinds of mortality, gross mortality, and net mortality. Gross mortality represents all the students who left the university during or at the end of the four-year period without receiving degrees. It also represents students who have not discontinued their education but have transferred to other institutions. Net mortality, on the other hand, represents students leaving the universities who neither transferred to another institution nor returned at a later date to continue work at the same institution.

The extent of student mortality in publicly and privately controlled universities is presented in Table I. The data pertaining to gross mortality shows that sixty-two students out of every one hundred left the universities without obtaining a degree. Of the sixty-two students, however, 17 per cent either transferred or returned at a later date to continue with their schooling.

Publicly controlled institutions claimed a larger percentage of student mortality than the privately controlled universities. There were approximately 65 per cent of the students who left publicly controlled universities as compared with 59 per cent who left privately controlled universities. There were 6 per cent less students leaving the privately controlled than the publicly controlled institutions. Net mortality indicated that forty-nine out of one hundred students left publicly controlled universities, while forty out

TABLE I  
STUDENT MORTALITY AS REPRESENTED BY PUBLICLY  
AND PRIVATELY CONTROLLED UNIVERSITIES<sup>a</sup>

University	Gross Mortality*	Net Mortality**
Publicly controlled	64.5	48.7
Privately controlled	58.5	39.9
Both types	62.1	45.2

\*The range for gross mortality for all universities is 42.2 to 79.5 per cent.

\*\*The range for net mortality for all universities is 26.9 to 62.6 per cent.

<sup>a</sup>McNeely, J. H., "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, 1937.

of every one hundred students left privately controlled universities. So the privately controlled universities lost nine fewer students per hundred than the publicly controlled universities.

The other side of the mortality picture is presented in Table II, which shows the percentage of students who obtained degrees at the end of the four-year period. For the universities as a whole, thirty-one students out of every one hundred who registered succeeded in obtaining degrees. In the publicly controlled universities twenty-eight out of every one hundred students obtained degrees at the end of the four-year period. In the privately controlled universities thirty-six out of every one hundred students obtained degrees. Thus there were eight more students per one hundred to obtain degrees in the privately controlled than in the publicly controlled universities.

Although McNeely <sup>5</sup> reports fairly complete data with respect to the extent of student mortality, his data on the cause of mortality is far from adequate. The majority of the colleges surveyed in this research kept no systematic records of the causes for student withdrawals. One difficulty that presents itself is the fact that a large number of students who leave at the end of the Spring Quarter fail to

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<sup>5</sup>Ibid., pp. 44-51.

TABLE II

PERCENTAGE OF STUDENTS OBTAINING DEGREES FROM  
PUBLICLY AND PRIVATELY CONTROLLED UNIVERSITIES<sup>a</sup>

Type of University	Percentage of Students
Publicly controlled	28.3
Privately controlled	36.4
Both types	31.6

<sup>a</sup>J. H. McNeely, "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, p. 15.

return by the following Fall Quarter. Such students rarely indicate their intentions for further scholastic work when they leave school. Thus it will be noted in Table III, which presents the causes of student mortality, that 45 per cent of the cases are classified as unknown. Of the known causes the greatest proportion results from dismissal for failure in academic work. Financial difficulties account for the next most important reason; 12.4 per cent of the students were reported leaving school because of this fact. Since this survey was made during the depression, the percentage dropping for financial reasons would, no doubt, be higher than that of today.

Under the term of miscellaneous causes are cited a variety of reasons why the students left the universities. They included such reasons as marriage, family moving away from the university, student obtained job, too many extra-curricular activities, inadequate high school foundation and the like.

Ill health accounted for 3.4 per cent of the student loss while the loss of students through death was the lowest of any reason listed being 0.6 per cent.

Only a few students, 0.8 per cent, left the universities because they were needed at home. Students classified as leaving the universities because of lack of interest constituted 6.1 per cent, and they consisted mostly of those

TABLE III  
CAUSES OF STUDENT MORTALITY<sup>a</sup>

Causes of Leaving Universities	Percentage of Students Leaving for Various Causes
Death	.6
Needed at Home	.8
Disciplinary Dismissal	1.1
Sickness	3.4
Lack of Interest	6.1
Miscellaneous	12.2
Financial Difficulties	12.4
Dismissal for Failure in Work	18.4
Unknown	45.0

<sup>a</sup>J. H. McNeely, "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, p. 51.



students who, in the opinion of faculty members, showed little interest in college work.

Table IV presents the percentage of students leaving universities by years (in terms of gross mortality), and it will be noted that the greatest mortality occurs during the freshman year. Approximately one third of freshman students "drop out" either during or at the end of the freshman year in school. The proportions for the sophomore, junior, and senior years are 16.7, 17.7, and 3.9 per cent, respectively.

Table V shows that with increase of grade point index the proportion of students dropping out decreases. The decile groupings were obtained by placing the total number of students in one of each of the groups according to their grade point index. The number of students leaving each group was then secured.

MacIntosh<sup>6</sup> in a discussion on student mortality found the causes for student mortality to be listed under seven headings. The four obvious ones are Academic, Financial, Transfer, and Health. The other three are Personal, Domestic, and the convenient "Other Reasons". The chief reason for dropping out is for academic failure, the next reason of importance being financial difficulties. Of the institutions

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<sup>6</sup>A. MacIntosh, Behind the Academic Curtain, (New York: Harper and Brothers, 1948), p. 51.

TABLE IV

PERCENTAGE OF STUDENTS LEAVING UNIVERSITIES BY YEARS<sup>a</sup>

Year	Percentage of Students Leaving
Freshman	33.8
Sophomore	16.7
Junior	7.7
Senior	3.9

<sup>a</sup>J. H. McNeely, "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, p. 21.

TABLE V

PERCENTAGE OF STUDENTS WHOSE ACADEMIC MARK RANKED  
THEM IN EACH DECILE GROUP LEAVING UNIVERSITIES<sup>a</sup>

Decile Group	Percentage of Students
Highest	26.2
Second	35.6
Third	41.4
Fourth	42.3
Fifth	50.3
Sixth	61.1
Seventh	74.3
Eighth	87.3
Ninth	95.7
Tenth	99.5

<sup>a</sup>J. H. McNeely, "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, p. 94.

that furnished data 33 per cent listed financial difficulties as the second strongest factor in student losses and 25 per cent place it first.

In referring to the implications of this problem MacIntosh<sup>7</sup> indicates that scholastic failure does not necessarily imply lack of aptitude. Scholastic difficulty may arise because the student does not know what he wants in college. One of the most effective means of preventing such failure would be a study of individual aptitudes and interests. Too many students are in college because it seems to be the thing to do or because of parental desire. Withdrawal for academic reasons should be thoroughly discussed with students. Transfer and personal reasons take a large percentage of students. Transfer may occur because the student or college is at fault. A thorough understanding of the college offerings and the opportunities a student has should be made known to him before entrance.

Mortality rates among various types of colleges differ significantly. Bird and Bird<sup>8</sup> found that academic mortality depended particularly on student selection and rigidity of academic standards. Mortality rates are generally higher in

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<sup>7</sup>MacIntosh, loc. cit.

<sup>8</sup>C. Bird and D. Bird, Learning More by Effective Study, (New York and London: D. Appleton-Century Company, Inc.), p. 239.

publicly controlled than in privately controlled universities, and in larger than in smaller schools. Mortality rates and academic retardation are found to be slightly greater among men students than among women students. Freshmen show the highest mortality rate. It is apparent, therefore, that achievement during the first year of college is one of the best indices of college success. Since certain academic curricula require higher academic ability, a wise student will have made an objective appraisal of his abilities and will select a profession which suits his interests and intellectual level. Although academic success is dependent, to a large extent, upon the college and the curriculum of study one chooses, many important factors for success are found in the various personality characteristics of the student himself.

In a tentative, restricted report issued by Washington State College<sup>9</sup> in the Spring of 1950, detailed data on student mortality was presented. The analysis was based on "students who had dropped out of school after having been enrolled for one or more semesters during the school years 1946-47, 1947-48, 1948-49, and also were not enrolled during the first semester 1949-50." This particular report is based on the returns of about 40 per cent of students who dropped

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<sup>9</sup>Tentative and Restricted Report on Student Mortality,  
(Washington State College, Pullman, Washington, 1950).

out and did not return. Again it will be noted that one of the basic difficulties of studying student mortality is the problem of securing complete data on all "drop outs". The two major reasons cited by students for dropping out of school were financial reasons (16.5 per cent of cases reporting) and low grades (15.3 per cent of cases reporting). Other reasons that were cited by less than 10 per cent of the students who returned questionnaires were as follows:

- (a) Married and did not wish to return
- (b) Living conditions such as food, housing, study, and rules.
- (c) Full time employment.
- (d) Preferred another town, state, or college.
- (e) Lacked the ability or desire to do college work.
- (f) Location - climate, town, cost of travel.
- (g) No degree in field.
- (h) Attended as long as planned.
- (i) Restless, homesick, discouraged, and generally discontented.
- (j) Not obvious or reasons unknown.
- (k) Dissatisfied with instructors and instruction.
- (l) Personal health.
- (m) Family needed help.

In the studies reported by McNeely, MacIntosh, Bird and Bird, and Washington State College it appears that academic failure is responsible for the largest percentage of student mortality while financial difficulties constitute another important factor.

It should be emphasized that in none of the studies listed complete data on all students who dropped out of school is presented. The returns, at best, yield data on approximately 50 per cent of "drop out" students. It is difficult to

determine what the results would indicate if they were based on all students who dropped out of school. The reasons for student drop outs as cited in this section must for this reason be interpreted with a great deal of caution.

## CHAPTER III

### DESIGN OF THE STUDY

#### I. PURPOSE OF STUDY

Heretofore most attempts to account for student mortality have been made in terms of questionnaire studies. The essential technique has been to mail a questionnaire to each "drop out" student and request him to indicate his reasons for leaving school. The limitations of such studies were indicated in a discussion of the review of the literature. For one thing, it was pointed out that the samples on which the studies were based were far from complete. For this reason it has been difficult to make really positive generalizations about student mortality. It might also be indicated that the replies of students on questionnaires are not necessarily the real reasons for their dropping out of school. This does not mean that students are necessarily falsifying their answers, but, in many cases, it may actually be difficult for the student to determine what the real reason may be.

Data at the Montana State University Counseling Center afforded the unique opportunity to study student mortality in relation to scholastic aptitude and measured personality traits. As part of the Orientation Week Testing Program scheduled for entering freshman students in the Fall Quarter



of 1948, the Minnesota Multiphasic Personality Inventory along with tests of scholastic aptitude were employed. The data on these tests made it possible to determine whether there were basic differences in measured personality characteristics of students who returned to school at the beginning of their sophomore year and those who did not return; this constituted the specific purpose of the present study.

In a comparison of returnees and non-returnees it must be remembered that many of the students who are classified as non-returnees may very well have continued their studies at other educational institutions. Actually, the non-returnees represent a very heterogeneous group. This point should be kept in mind in the comparative analysis of the data pertaining to returnees and non-returnees.

## II. SUBJECTS

Students selected for this study were entering freshmen who enrolled at Montana State University in the Fall Quarter of 1948. In order to secure a homogeneous group with respect to academic work only those students who were registered in the College of Arts and Sciences were employed in the study.

For purposes of the study subjects were classified into two basic groups:

- (1) Returnee - Entering freshman student in the Fall

Quarter of 1948 who returned to Montana State University in the Fall Quarter of 1949.

- (2) Non-Returnee - Entering freshman student in the Fall Quarter of 1948 who failed to return to Montana State University in the Fall Quarter of 1949.

In order to control differences in scholastic aptitude, students were further classified on the basis of their performance on the American Council on Education Psychological Examination, Form 1947\*:

- (1) Upper Half - Students whose scores on the ACE test placed them in the highest 50 per cent of entering freshman students.
- (2) Lower Half - Students whose scores on the ACE test placed them in the lowest 50 per cent of entering freshman students.

A further classification of students was made in terms of sex. This scheme of classifying students resulted in eight distinct groups:

- (1) "Upper Half" Male Returnees - Male students in the highest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (2) "Upper Half" Male Non-Returnees - Male students in

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\*Throughout the rest of the study this test will be designated as the ACE test.

the highest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.

- (3) "Lower Half" Male Returnees - Male students in the lowest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (4) "Lower Half" Male Non-Returnees - Male students in the lowest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.
- (5) "Upper Half" Female Returnees - Female students in the highest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (6) "Upper Half" Female Non-Returnees - Female students in the highest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.
- (7) "Lower Half" Female Returnees - Female students in the lowest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (8) "Lower Half" Female Non-Returnees - Female students in the lowest 50 per cent on scholastic aptitude

who failed to return to Montana State University in the Fall Quarter of 1949.

The number of students represented in each of these eight groups is presented in Table VI.

TABLE VI

INCIDENCE OF MEN AND WOMEN AMONG THE  
RETURNEE AND NON-RETURNEE GROUPS

	Men	Women
"Upper Half" Returnees	52	34
"Upper Half" Non-Returnees	21	29
"Lower Half" Returnees	51	33
"Lower Half" Non-Returnees	<u>42</u>	<u>23</u>
Total	166	119

It will be noted that of the one hundred and sixty-six men in this study one hundred and three, or 62 per cent returned in the Fall Quarter of 1949 and 38 per cent, did not return. For the one hundred and nineteen women in this study sixty-seven, or 56 per cent, returned in the Fall Quarter of 1949 and 44 per cent did not return. The results indicate a definite tendency for the women to show a greater incidence of student mortality.

## III. INSTRUMENTS EMPLOYED

Measure of scholastic aptitude. As was indicated in the previous section the measure of scholastic aptitude was the American Council on Education Psychological Test, Form 1947. This test was primarily constructed for use with entering college freshmen and is one of the most widely used tests in determining ability for academic work at the college level.

The ACE test is a time-limited group test consisting of six sub-tests. The sub-tests are in turn classified under two divisions:<sup>1</sup>

- (A) Quantitative Component (designated by the letter Q).
- (B) Linguistic Component (designated by the letter L).

The sub-tests for each of the components are presented in alternation as follows:

- (A) Arithmetical Reasoning (Q component)
- (B) Same-Opposite (L component)
- (C) Figure Analogies (Q component)
- (D) Completion (L component)
- (E) Number Series (Q component)
- (F) Verbal Analogies (L component)

The time limits for each of the sub-tests vary from

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<sup>1</sup>The American Council on Education, Manual of Instructions, (Washington, D. C: The Council, 1946), p. 2.

five to ten minutes. Each sub-test is preceded by a practice exercise to give the student familiarity with the nature of the test items.

The construction of the test thus permits the calculation of three scores:

- (A) Quantitative score
- (B) Linguistic score
- (C) Total test score

For purposes of this study separate scores on Q and L were not employed; the scores used were those based on the total test.

Measure of personality traits. As was indicated in the previous section, the measure of personality traits was the Minnesota Multiphasic Personality Inventory, which will be referred to as the MMPI. This test can be administered either individually or in groups. The group form of this inventory was employed in the testing program at Montana State University in 1948. The inventory, as defined in the Manual, "is a psychometric instrument designed ultimately to provide, in a single test, scores on all of the more important phases of personality."<sup>2</sup>

There are nine scales pertaining to specific personality

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<sup>2</sup>S. R. Hathaway and J. C. McKinley, Manual for the Minnesota Multiphasic Personality Inventory, (New York: The Psychological Corporation, 1946), p. 2.

variables. Each of these scales were "developed by contrasting. . .normal groups with carefully studied clinical cases. . . ."3 In addition the inventory provides four special keys which are designed to increase the validity of the clinical scales. Each of the scales is defined in the Manual as follows.

Clinical scales of the MMPI. Hs. The Hs or Hypochondriasis scale is defined in the Manual "as the amount of abnormal concern about bodily functions."<sup>4</sup> An individual with hypochondriacal tendencies is usually immature in his approach to problems and he frequently uses his illness as a means of seeking sympathy. Richards<sup>5</sup> states that the hypochondriacal individual is convinced of his illness no matter what his doctor may say.

D. The D or Depression scale as described by the Manual is "an indicator of poor morale of the emotional type with a feeling of uselessness and inability to assume a normal optimism with regard to the future."<sup>6</sup> The depression may be a separate entity or it may be the result of other personality manifestations. Typically the worrier, the introverted

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<sup>3</sup>Hathaway and McKinley, loc. cit.

<sup>4</sup>Ibid., p. 4.

<sup>5</sup>T. W. Richards, Modern Clinical Psychology, (New York: McGraw-Hill Book Company, Inc., 1946), p. 184.

<sup>6</sup>Hathaway and McKinley, op. cit., p. 4.

personality and the individual with few interests are those who react to stress by depression.

Hy. The Hy or Hysteria scale as stated by Blum and Balinsky "measures such symptoms as general pains and more specific complaints such as paralysis and heart and gastric disorders."<sup>7</sup> As in the case of individuals with hypochondriacal tendencies, individuals characterized by hysteria also tend to be immature. Hysterical symptoms are frequently employed as a means of escaping from disagreeable tasks.

Pd. The Pd or Psychopathic Deviate personality is described by the Manual as being characteristic of individuals ". . .whose main difficulty lies in their absence of deep emotional response, their inability to profit from experience, and their disregard of social mores."<sup>8</sup> The psychopathic deviate is often friendly, intelligent, and likeable; however, he tends to be amoral and does not appear to benefit from experience. Sexual immorality, drug and alcoholic addiction are frequently characteristic of the Pd personality.

Mf. The Mf or Interest scale is a measure of the degree of similarity with masculine or feminine interest patterns. According to the Manual "males with very high Mf

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<sup>7</sup>M. Blum and B. Balinsky, Counseling and Psychotherapy, (New York: Prentice-Hall, Inc., 1951), p. 284.

<sup>8</sup>Hathaway and McKinley, op. cit., p. 5.



scores have frequently been found to be either overt or repressed sexual inverts. Among females high scores cannot yet be safely assumed to have similar clinical significance."<sup>9</sup> This scale may be of value in vocational guidance in providing cues as to the individual's basic interest patterns.

Pa. The Pa or Paranoia scale is characterized by persons who are suspicious, over-sensitive, and who have hallucinations and delusions of persecution. In paranoia one's weaknesses and incapacities are projected onto the environment and not accepted by the individual. As Richards states, "Paranoia is typically a solution characterized by rationalization which is logical and intelligent, meaningful and usually intelligible, but which is based on premises that are tenuous."<sup>10</sup>

Pt. The Manual states that the "Pt (or Psychasthenia) scale measures the similarity of the subject to psychiatric patients who are troubled by phobias or compulsive behavior."<sup>11</sup> Blum and Balinsky in describing compulsive behavior state that it "may be overt like stepping on every crack in the street, washing hands every little while, or in terms of obsessional ideas that occur over and over again. Phobias are irrational fears that are symbolic of deeper disturbances."<sup>12</sup>

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<sup>9</sup>Hathaway and McKinley, loc. cit.

<sup>10</sup>Richards, op. cit., p. 205.

<sup>11</sup>Hathaway and McKinley, op. cit., p. 6.

<sup>12</sup>Blum and Balinsky, op. cit., p. 284.

Sc. The Sc or Schizophrenic personality is exhibited by bizarre or unusual thoughts and behavior. According to the Manual, "The Sc Scale distinguishes about 60 per cent of observed cases diagnosed as schizophrenia. It does not identify some paranoia types of schizophrenia, which, however, usually score high on Pa, and certain other cases which are characterized by relatively pure schizoid behavior."<sup>13</sup> The schizophrenic personality is mainly concerned about himself. Richards states that the schizophrenic "hesitates to become conspicuous socially or to take an attitude of open friendliness toward the opposite sex or toward children or even toward parents--his real concern socially is in regard to his own acceptability."<sup>14</sup>

Ma. The work Ma or hypomanic refers to a lesser state of mania and is characterized by persons with marked over-productivity of thought and action. The Manual states that "the hypomanic patient has usually gotten into trouble because of undertaking too many things. He is active and enthusiastic. Contrary to common expectation he may also be somewhat depressed at times. His activities may interfere with other people through his attempts to reform social practice, his enthusiastic stirring up of projects in which he

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<sup>13</sup>Hathaway and McKinley, op. cit., p. 6.

<sup>14</sup>Richards, op. cit., p. 205.

then may lose interest, or his disregard of social conventions."<sup>15</sup>

Validating scales. ?. The Question scale consists of the items not answered either "true" or "false" and therefore belonging in the "cannot say" category. The number of questions not answered affects the validity of the test itself and generally implies that the scores on the personality variables would probably deviate to a greater extent in the direction of abnormality.

L. The Lie scale is a measure of the extent to which the individual is attempting to place himself in a better light socially by choosing the responses to questions that tend to present him in a favorable light.

F. The F or Validity score serves as a check on the validity of the test as a whole and is not considered a personality scale. The Manual states that "if the F score is high, the other scales are likely to be invalid either because the subject was careless or unable to comprehend the items, or because someone made extensive errors in entering the items on the record sheet."<sup>16</sup>

K. The symbol K applies to a new scale which has been recently added to the MMPI. The Supplementary Manual states

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<sup>15</sup>Hathaway and McKinley, op. cit., p. 6.

<sup>16</sup>Ibid., p. 2.

that "K is essentially a correction factor which has been found to be of value in sharpening the discriminatory power of the clinical variables now measured by the MMPI. . . . Its effects only accentuate the validity of five of the nine existing clinical scales and to make normals appear more normal."<sup>17</sup> As McKinley, Hathaway, and Meehl<sup>18</sup> indicate, K is also a measure of subtle test-taking attitudes.

The construction of the personality schedule is described by Hathaway and McKinley,<sup>19</sup> of the hypochondriasis scale,<sup>20</sup> of the depression scale,<sup>21</sup> of the psychasthenia scale,<sup>22</sup> of the hysteria, hypomania, and psychopathic deviate

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<sup>17</sup>S. R. Hathaway and J. C. McKinley, Supplementary Manual for the Minnesota Multiphasic Personality Inventory, (New York: The Psychological Corporation, 1946), p. 2.

<sup>18</sup>J. C. McKinley, S. R. Hathaway, and P. E. Meehl, "The Minnesota Multiphasic Personality Inventory: VI. The K Scale," Journal of Consulting Psychology, 22: , January-February, 1948.

<sup>19</sup>S. R. Hathaway and J. C. McKinley, "A Multiphasic Personality Schedule: I. Construction of the Schedule," Journal of Psychology, 10:249-54, 1940.

<sup>20</sup>J. C. McKinley and S. R. Hathaway, "A Multiphasic Personality Schedule: II. A Differential Study of Hypochondriasis," Journal of Psychology, 10:255-68, 1940.

<sup>21</sup>S. R. Hathaway and J. C. McKinley, "A Multiphasic Personality Schedule: III. The Measurement of Symptomatic Depression," Journal of Psychology, 14:73-84, 1942.

<sup>22</sup>J. C. McKinley and S. R. Hathaway, "A Multiphasic Personality Schedule: IV. Psychasthenia," Journal of Psychology, 26:614-24, 1942.

scales,<sup>23</sup> and of the K scale by Hathaway, McKinley, and Meehl<sup>24</sup> and by Meehl and Hathaway.<sup>25</sup>

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<sup>23</sup>J. C. McKinley and S. R. Hathaway, "The Minnesota Multiphasic Personality Inventory: V. Hysteria, Hypomania, and Psychopathic Deviate," Journal of Applied Psychology, 28:153-74, 1944.

<sup>24</sup>J. C. McKinley, S. R. Hathaway, and P. E. Meehl, "The Minnesota Multiphasic Personality Inventory: VI. The K Scale," Journal of Consulting Psychology, 22: January-February, 1948.

<sup>25</sup>P. E. Meehl and S. R. Hathaway, "The K Factor as a Suppressor Variable in the Minnesota Multiphasic Personality Inventory," Journal of Applied Psychology, 30:525-64, October, 1946.

## CHAPTER IV

### RESULTS

Comparative performance on the ACE test of Returnees and Non-Returnees. In order to determine differences in scholastic aptitude for Returnee and Non-Returnee students the distribution of ACE scores for each of these two groups was plotted separately. The data for women is presented in Table VII and that for men in Table VIII. Tables IX and X also contain the means and standard deviations of the Returnee and Non-Returnee groups as well as the differences in mean scores and the corresponding "t" values.

In Table VII, which presents the ACE data on women, the scores on Returnees range from 63 to 152 and for Non-Returnees from 65 to 167. The means for these two groups are 107.78 and 108.51 respectively. The corresponding standard deviations are 4.37 and 4.64. The two means approximate each other very closely in value with an actual difference of only 0.73.

In order to determine whether the differences between means are significantly greater than chance, Fisher's "t"<sup>1</sup> test was employed. The specific formula for calculating "t"

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<sup>1</sup>R. A. Fisher, Statistical Methods for Research Workers, (Edinburgh: Oliver and Boyd, 1938), pp. 120-133.

as presented by Goodenough<sup>2</sup> is given below:

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sum d_1^2 / \sum d_2^2}{N_1 / N_2 - 2} \frac{1}{N_1} + \frac{1}{N_2}}}$$

- in which (a)  $M_1$  and  $M_2$  are the means of the two samples;  
 (b)  $d_1^2$  and  $d_2^2$  are the sums of the squares of the deviations of the individual measures from their respective means;  
 (c)  $N_1$  and  $N_2$  are the number of cases in each sample;  
 (d)  $N_1 / N_2 - 2$  defines the degrees of freedom.

Tables providing values for "t" at the 5 per cent and 1 per cent levels of significance as presented by Edwards<sup>3</sup> were employed in determining the significance of difference between means. For purposes of this study a difference with a corresponding "t" value at the 5 per cent level of probability or better was accepted as significantly greater than chance.

It will be noted in Table VII that the difference of 0.73 in mean ACE scores between female Returnees and Non-Returnees yields a "t" value which is not significantly

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<sup>2</sup>Florence Goodenough, Mental Testing, (New York: Rinehart and Company, Inc., 1949), p. 243.

<sup>3</sup>A. L. Edwards, Statistical Analysis, (New York: Rinehart and Company, Inc., 1946), pp. 330-331.

TABLE VII

DISTRIBUTION OF AGE SCORES OF FEMALE RETURNEES  
AND FEMALE NON-RETURNEES

Class Interval	Number of Cases	
	Female Returnees	Female Non-Returnees
165-169	0	3
160-164	0	0
155-159	0	0
150-154	1	0
145-149	1	0
140-144	4	0
135-139	3	2
130-134	3	6
125-129	4	5
120-124	4	6
115-119	9	2
110-114	4	5
105-109	7	4
100-104	5	3
95-99	2	2
90-94	7	5
85-89	4	3
80-84	2	2
75-79	1	1
70-74	3	2
65-69	1	1
60-64	2	0
N = 67		N = 52
Mean 107.78		Mean 108.51
S. D. 4.3651		S. D. 4.6420
Difference in Means		0.73
"t" = 1.5633		



greater than chance. Thus the data indicates that there is no significant difference in scholastic aptitude between Returnees and Non-Returnees for the women in this sample.

Table VIII presents the ACE distribution on male Returnees and Non-Returnees. The range of scores is from 57 to 160 for the Returnees and from 44 to 164 for the Non-Returnees. The means for these two groups are 107.67 and 105.98 respectively. The corresponding standard deviations are 4.54 and 4.83. The difference between the two means is 1.69 and the corresponding "t" value of 2.26 is significant at the 5 per cent level of probability or better.

Thus in comparing the data on men and women the results indicate that female Returnees and Non-Returnees evidence no significant difference in mean ACE scores, whereas male Returnees and Non-Returnees do. It would appear that scholastic aptitude plays a greater role in determining whether male students will drop out of school than it does in the case of female students. Figures 1 and 2, which present cumulative frequency distributions of ACE scores on female and male Returnees and Non-Returnees, illustrate this trend. It will be noted in Figure 1 that the two curves for the female Returnee and Non-Returnee groups approximate each other very closely and that there is overlapping along parts of the distribution. In Figure 2, however, which pertains to the distributions of ACE scores on males, the two curves are

TABLE VIII

DISTRIBUTION OF ACE SCORES OF MALE RETURNEES  
AND MALE NON-RETURNEES

Class Interval	Number of Cases	
	Male Returnees	Male Non-Returnees
160-164	0	1
155-159	2	0
150-154	1	0
145-149	3	2
140-144	4	0
135-139	4	1
130-134	6	3
125-129	3	4
120-124	8	4
115-119	7	1
110-114	9	4
105-109	6	2
100-104	12	6
95-99	12	6
90-94	8	4
85-89	1	9
80-84	5	7
75-79	2	3
70-74	3	3
65-69	3	0
60-64	1	0
55-59	1	0
50-54	1	0
45-49	0	1
40-44	0	2
N = 103		N = 63
Mean 107.67		Mean 105.98
S. D. 4.5405		S. D. 4.8255
Difference in Means		1.69
"t" = 2.2578		

distinct from one another and show no overlapping. A further study of these two Figures indicates that about 70 per cent of the male Returnees reach or exceed the median ACE score of the male Non-Returnees (Figure 2). In the case of the females (Figure 1), however, the difference in median ACE scores is much less marked; thus, about 55 per cent of the Non-Returnees reach or exceed the median of the Returnees. (In this case the Non-Returnees show a slightly higher median score, but the difference is not significant.)

In summarizing the data on ACE results the evidence definitely suggests that in studies of student mortality analyses should be made separately for men and women.

Comparative differences on the MMPI. MMPI data pertaining to female Returnees and Non-Returnees is presented in Tables IX and X; the data for "upper half" females is indicated in Table IX and that for "lower half" females in Table X.

In each table the MMPI scale is indicated in the left hand column, the means and standard deviations on Returnees and Non-Returnees are presented in the second, third, fourth, and fifth columns, the difference in MMPI scores in the sixth column, and the corresponding "t" values in the seventh column.

In comparing the data in Tables IX and X it will be noted that female Returnees, whether they are in the "lower half" or "upper half" groups, evidence significantly greater K scores. Thus for the "lower half" females the mean K score

Percentage  
of cases

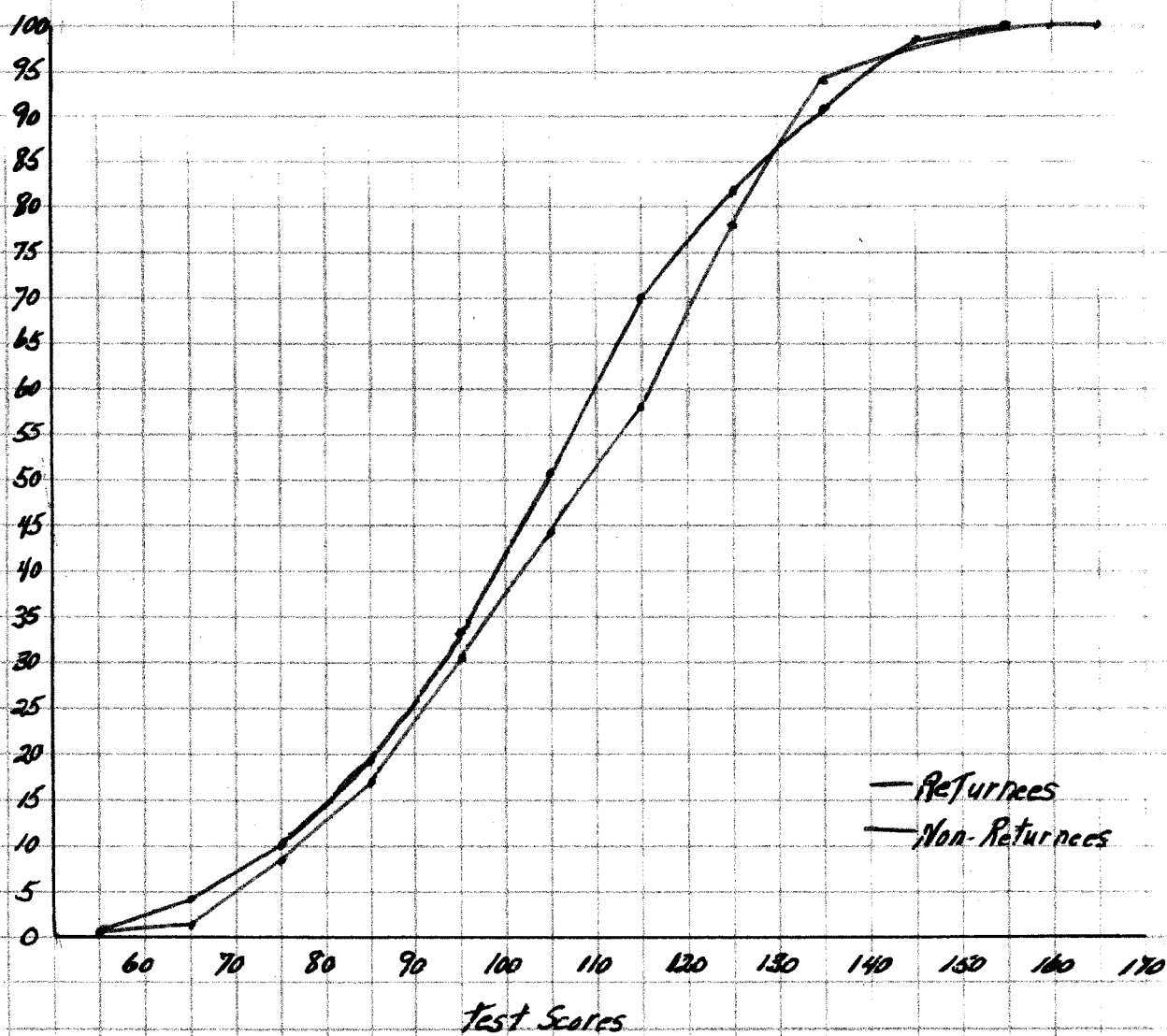


FIGURE I  
CUMULATIVE FREQUENCY DISTRIBUTIONS OF ACE SCORES  
OF FEMALE RETURNEES AND NON-RETURNEES

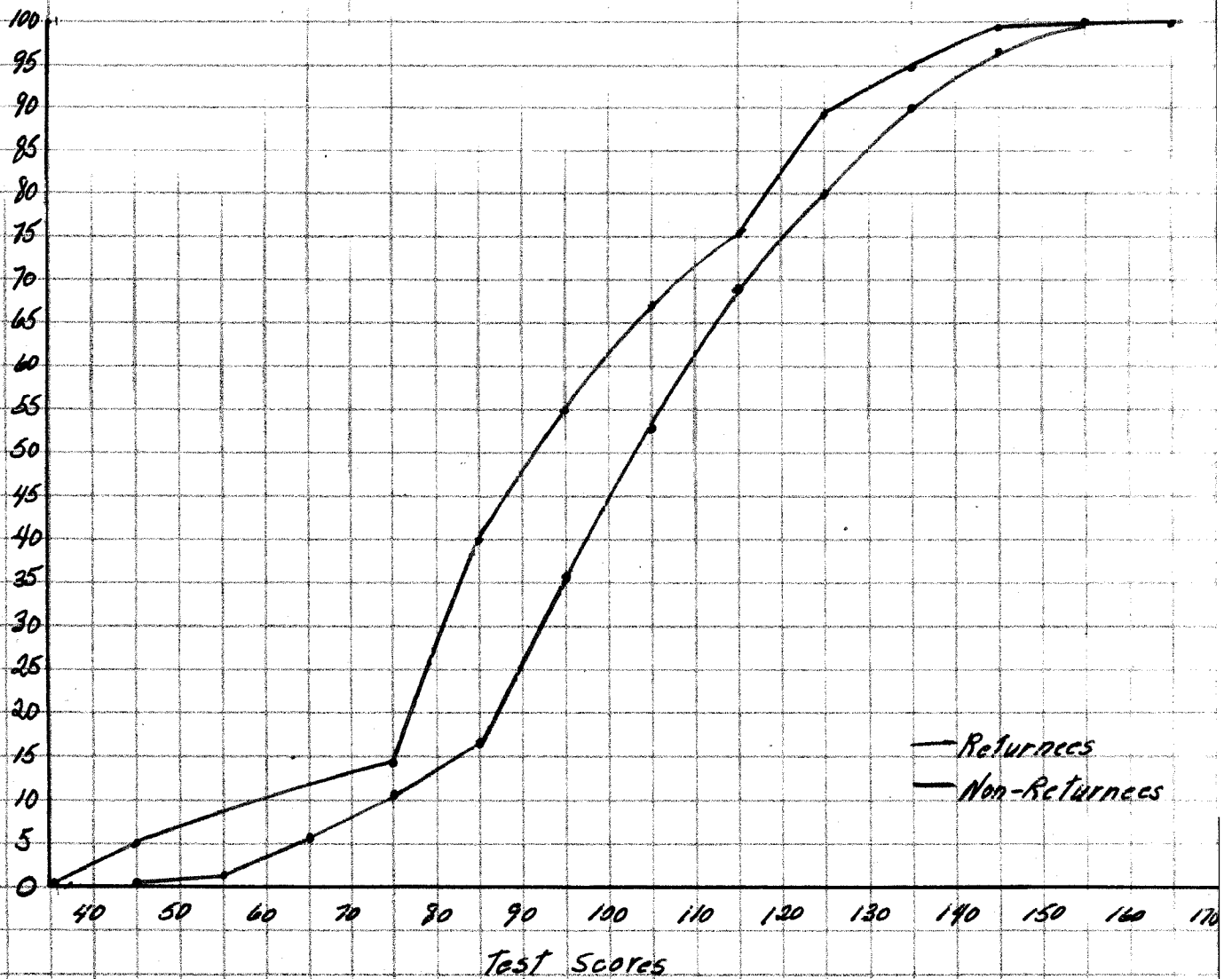
Percentage  
of cases

FIGURE 2  
CUMULATIVE FREQUENCY DISTRIBUTIONS OF ACE SCORES  
OF MALE RETURNEES AND NON- RETURNEES

for Returnees is 55.94 and for Non-Returnees is 49.57. The corresponding standard deviations are 8.86 and 5.96 respectively. The difference in mean scores of 6.37 yields a "t" value of 2.9454. This value is significant at the 1 per cent level of probability or better.

For the "upper half" females the mean K score for Returnees is 57.06 and for the Non-Returnees is 51.76. The corresponding standard deviations are 8.15 and 7.31 respectively. The difference in mean scores of 5.30 yields a "t" value of 2.6515. This value is significant at the 5 per cent level of probability or better and just falls short of meeting significance at the 1 per cent level.

These differences in mean K scores are the most significant found in the entire study. They indicate rather definitely that women who remain in college reflect the characteristics measured by the K scale to a much more significant degree than do girls who do not return to college. As was pointed out earlier the K scale measures a test-taking attitude. Since high K scores indicate a defensive attitude and a motivation to make good scores, it would appear that female Returnees as a group tend to answer the items on the inventory in such a way as to place them in the best favorable light. As McKinley, Hathaway, and Meehl<sup>4</sup> indicate, a high

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<sup>4</sup>J. C. McKinley, S. R. Hathaway, and P. E. Meehl, "The Minnesota Multiphasic Personality Inventory: VI. The K Scale," Journal of Consulting Psychology, 12: January-February, 1948.

TABLE IX

MEANS, STANDARD DEVIATIONS, AND CORRESPONDING "t" VALUES  
OF MMPI SCORES FOR THE "UPPER HALF" OF  
FEMALE RETURNEES AND NON-RETURNEES

MMPI Keys	Returnees (N = 34)		Non-Returnees (N = 29)		Difference in Means	"t"
	Mean	S. D.	Mean	S. D.		
L	52.53	3.9099	50.76	2.2145	/1.77	2.1231
F	53.32	5.2669	55.45	4.8150	-2.13	1.6362
K	57.06	8.1536	51.76	7.3078	/5.30	2.6515
Ha	49.26	8.8157	48.00	6.0030	/1.26	.9414
D	47.53	8.0500	49.52	9.0025	-1.99	.9108
Hy	53.76	9.4036	50.41	4.9607	/3.35	1.6949
Pd	53.24	9.3939	55.52	11.4848	-2.28	.8524
Mf	46.91	6.2686	51.72	11.7910	-4.81	2.0289
Pa	56.18	8.4727	54.21	7.2179	/1.97	.9675
Pt	53.91	6.2687	56.07	7.2008	-2.16	1.2519
Sc	52.74	6.6072	56.55	9.6197	-3.81	1.8233
Ma	54.79	10.9787	56.31	11.3235	-1.52	.5309

TABLE X

MEANS, STANDARD DEVIATIONS, AND CORRESPONDING "t" VALUES  
OF MMPI SCORES FOR THE "LOWER HALF" OF  
FEMALE RETURNEES AND NON-RETURNEES

MMPI Keys	Returnees (N = 33)		Non-Returnees (N = 29)		Difference in Means	"t"
	Mean	S. D.	Mean	S. D.		
L	53.18	5.9185	52.22	4.6997	/ .96	.6357
F	54.36	6.8503	55.91	7.7748	-1.55	.7732
K	55.94	8.8633	49.57	5.9607	/6.37	2.9454
Hs	53.64	10.4128	46.96	5.4145	/6.68	2.2827
D	50.64	10.9311	51.26	8.4811	- .62	.2238
Hy	55.79	9.1010	50.70	4.4968	/5.09	2.4284
Pd	55.55	7.2590	54.87	10.8221	/ .68	.2765
Mf	52.03	10.5815	53.04	9.8406	-1.01	.3547
Pa	56.06	11.2942	56.74	8.2087	- .68	.2420
Pt	56.09	11.3466	57.35	8.4168	-1.26	.4438
Sc	55.87	14.3941	56.70	9.7863	- .83	.2357
Ma	57.06	8.3924	54.78	9.0048	/2.28	.9525



K score may be interpreted to mean "faking good". These writers also report that college students and college educated persons tend on the average to have higher K scores than individuals not attending college.

The clear cut differences in K scores for the "lower half" and "upper half" females are graphically illustrated in Figures 3 and 4. For both the "lower half" and "upper half" females we find that about 80 per cent of the Returnees reach or exceed the median K score of the Non-Returnees.

Another scale which yields a significant difference for the "upper half" females is the L scale. The mean L score for Returnees is 52.53 and for Non-Returnees is 50.76. The standard deviation is 3.91 and 2.21 respectively. The difference between means is 1.77 and this yields a "t" of 2.1231 which is significant at the 5 per cent level of probability or better. It is possible that the higher mean L score may also reflect a tendency on the part of girls remaining in college to present themselves in a more favorable light.

A third scale which yields a significant difference for the "upper half" females is the Mf scale. The mean score for the Returnees is 46.91 and for the Non-Returnees 51.72. The standard deviations are 6.27 and 11.79 respectively. The difference between the means of 4.81 yields a "t" value of 2.0289, which is significant at the 5 per cent level of probability or better. The data in this instance suggests that "upper half" females who do not return to school reflect a

Percentage  
of cases

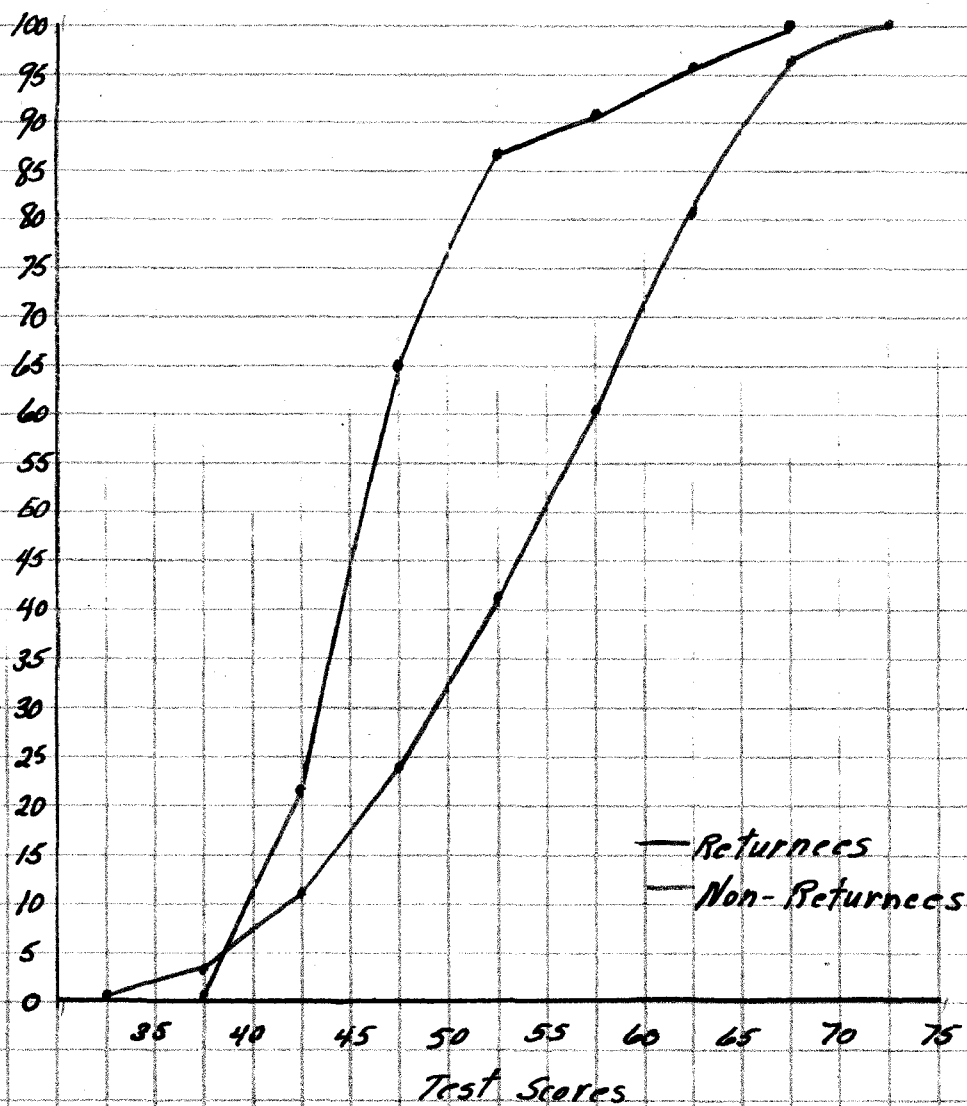


FIGURE 3

CUMULATIVE FREQUENCY DISTRIBUTIONS OF K SCORES FOR  
"LOWER HALF" FEMALE RETURNEES AND NON-RETURNEES

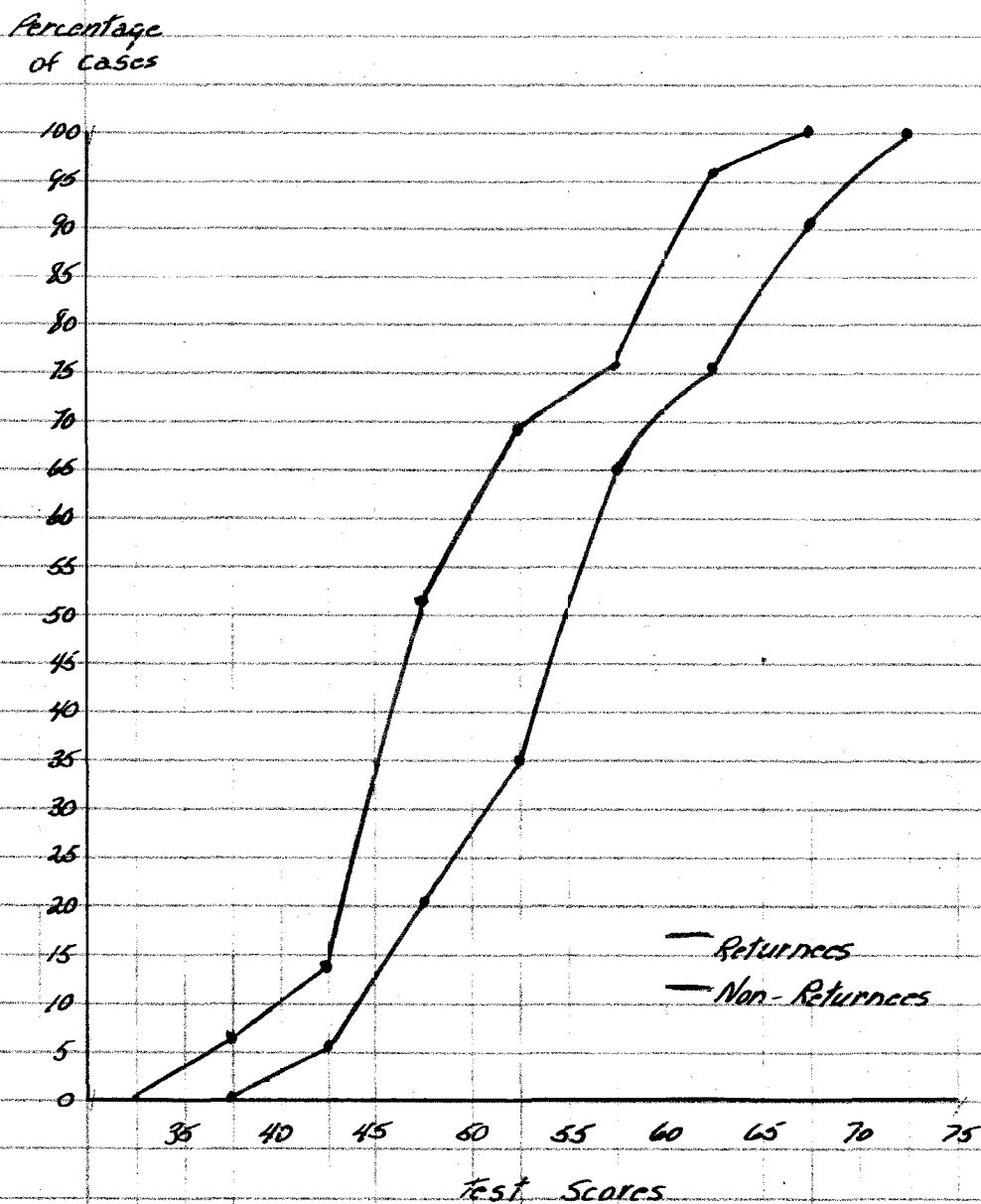


FIGURE 4  
CUMULATIVE FREQUENCY DISTRIBUTIONS OF K SCORES FOR  
"UPPER HALF" FEMALE RETURNEES AND NON-RETURNEES

more marked masculine interest pattern than do girls who remain in college. The differences between "upper half" female Returnees and Non-Returnees on the Mf scale are graphically illustrated in Figure 5. It will be noted that, although there is some overlapping in the lower end of the distribution, the two curves remain distinct from one another in the upper half of the distribution. It is found, too, that about 65 per cent of the Non-Returnees reach or exceed the median Mf score of the Returnees. This significant difference in Mf scores for Returnees and Non-Returnees is absent in the case of "lower half" females.

Of further interest is the fact that whereas the scales of the "neurotic triad"\* reflect significant differences between Returnees and Non-Returnees in the "lower half" female group they do not reflect such differences for girls in the "upper half" group.

Thus the "upper half" female Returnees on the Hs scale have a mean score of 49.36 and the Non-Returnees 48.00. The standard deviations are 8.82 and 6.00 respectively. The difference between the means is 1.26 and this yields a "t" value of 0.9414, which is not significant. Also on the D scale the "upper half" female Returnees have a mean of 47.53 and the Non-Returnees of 49.52. The standard deviations are

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\*Scales constituting the "neurotic triad" are Hypochondriasis (Hs), Depression (D), and Hysteria (Hy).

Percentage  
of cases

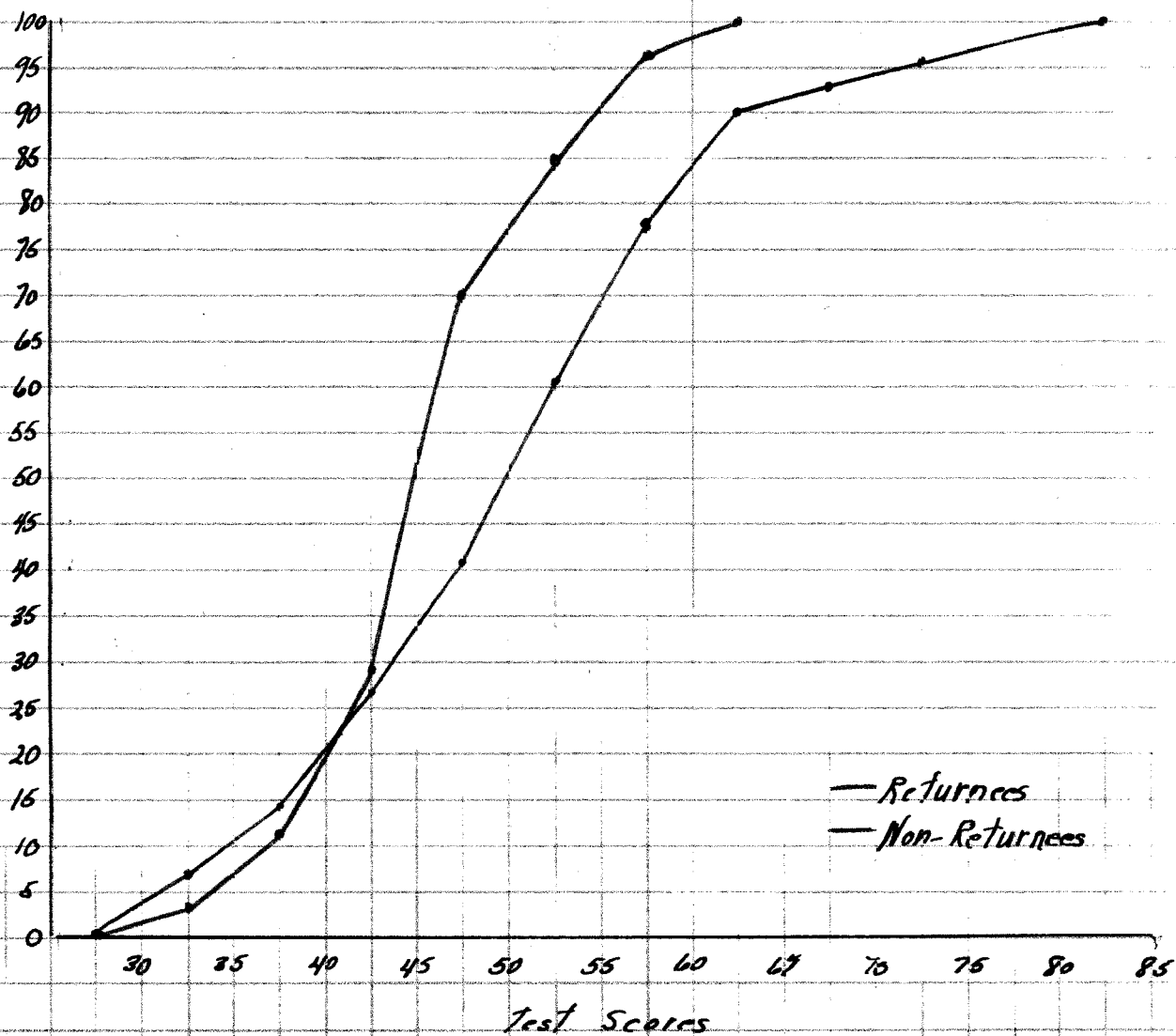


FIGURE 5

CUMULATIVE FREQUENCY DISTRIBUTIONS OF MF SCORES FOR  
"UPPER HALF" FEMALE RETURNEES AND NON-RETURNEES

8.05 and 9.00 respectively. The difference between the means is 1.99 and this yields a "t" value of 0.9108 which is not significant. On the Hy scale the "upper half" female Returnees have a mean score of 53.76 and the Non-Returnees 50.41. The standard deviations are 9.40 and 4.96 respectively. The difference between means is 3.35 and this yields a "t" value of 1.6949 which is not significant.

In examining the data on the "lower half" female group, however, we find significant differences on two of the three scales constituting the "neurotic triad". On the Hs scale the mean score for the Returnees is 53.64 and for the Non-Returnees 46.96. The standard deviations are 10.41 and 5.41 respectively. The difference between means is 6.68 and this yields a "t" value of 2.2827 which is significant at the 5 per cent level of probability or better. The extent of this difference is graphically illustrated in Figure 6, which presents the cumulative frequency distributions of Hs scores for "lower half" female Returnees and Non-Returnees. It will be noted that about 70 per cent of Returnees reach or exceed the median of Non-Returnees.

On the D scale the mean Returnee score is 50.64 and the mean Non-Returnee score is 51.26. The standard deviations are 10.93 and 8.48 respectively. The difference between means of 0.62 yields a "t" value of 0.2238 which is not significant.

Table X shows the mean Returnee score for Hy to be

Percentage  
of cases

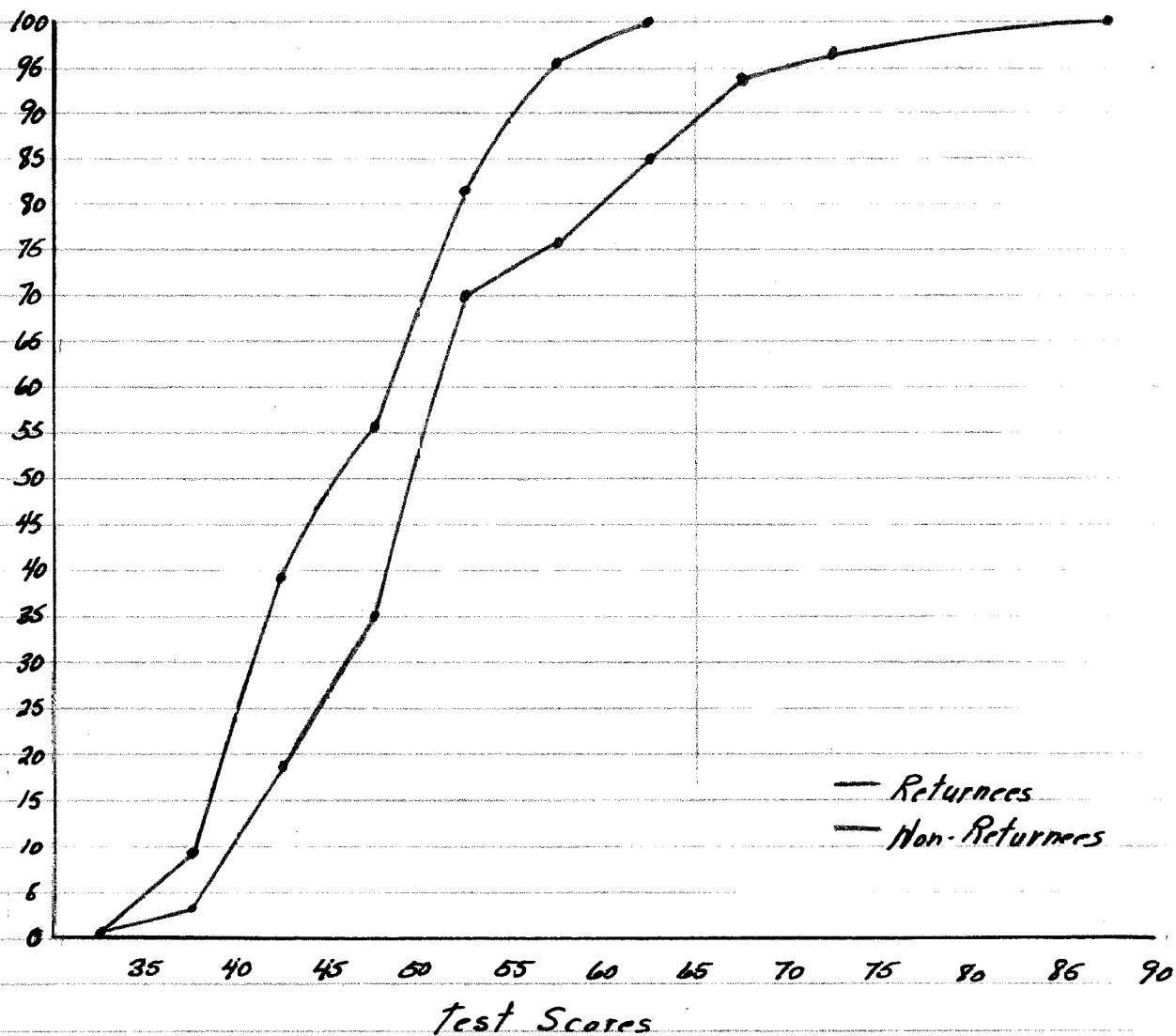


FIGURE 6

CUMULATIVE FREQUENCY DISTRIBUTIONS OF Hs SCORES FOR  
"LOWER HALF" FEMALE RETURNEES AND NON-RETURNEES

55.79 and the mean Non-Returnee score to be 50.70. The standard deviations are 9.10 and 4.50 respectively. The difference in means of 5.09 yields a "t" value of 2.4284 which is significant at the 5 per cent level of probability or better. This difference is further illustrated in Figure 7, which presents the cumulative frequency distributions of Hy scores for "lower half" female Returnees and Non-Returnees. It will be noted that about 77 per cent of Returnees reach or exceed the median of Non-Returnees.

The results on the Hs and Hy scales definitely indicate that girls of lesser scholastic aptitude who remain in college evidence neurotic traits to a greater degree than girls of comparable ability who do not return to college. This data may be all the more significant in that differences in neurotic traits between Returnees and Non-Returnees are not evidenced for the brighter girls (that is, girls whose percentile ranks on the ACE are 50 or higher).

MMPI data pertaining to male Returnees and Non-Returnees is contained in Tables XI and XII: the data for "upper half" males is indicated in Table XI and that for "lower half" males in Table XII.

In each table the MMPI scale is indicated in the left hand column, the means and standard deviations on Returnees and Non-Returnees are presented in the second, third, fourth, and fifth columns, the difference in MMPI scores in the sixth



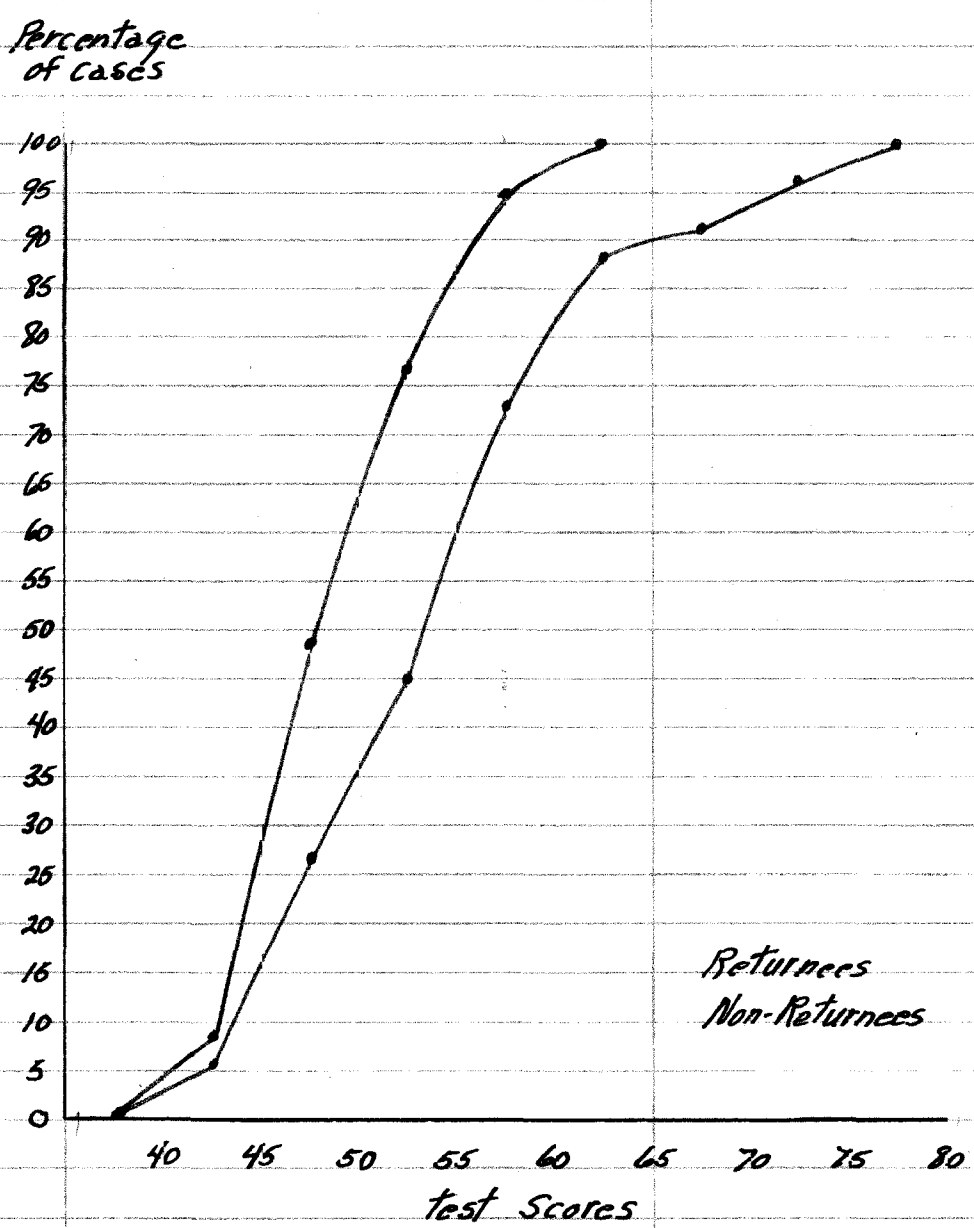


FIGURE 7

CUMULATIVE FREQUENCY DISTRIBUTIONS OF Hy SCORES FOR  
 "LOWER HALF" FEMALE RETURNEES AND NON-RETURNEES

column, and the corresponding "t" values in the seventh column.

The male students in contrast to the female students fail to show significant differences in personality characteristics between Returnees and Non-Returnees. This is true whether we analyze the data for "lower half" males or "upper half" males. It is rather interesting to note that, whereas male Returnees and Non-Returnees are differentiated on the basis of their performance on the ACE test, female Returnees and Non-Returnees are not so differentiated. On the other hand, the male Returnees and Non-Returnees do not show significant differences in personality traits whereas female Returnees and Non-Returnees do.

TABLE XI

MEANS, STANDARD DEVIATIONS, AND CORRESPONDING "t" VALUES  
OF MMPI SCORES FOR THE "UPPER HALF" OF  
MALE RETURNEES AND NON-RETURNEES

MMPI Keys	Returnees (N = 52)		Non-Returnees (N = 21)		Difference in Means "t"	
	Mean	S. D.	Mean	S. D.		
L	51.29	3.8314	50.48	2.1995	/ .81	1.0196
F	53.87	6.9678	54.52	6.3057	- .65	.3653
K	55.48	8.4968	53.57	9.1245	/1.91	.8395
Hs	51.67	7.8058	47.95	10.7957	/3.72	1.6212
D	51.67	9.1881	48.67	7.4789	/3.00	.3704
Hy	54.94	5.7511	53.00	9.8641	/1.94	1.0344
Pd	56.85	10.5243	54.81	10.1519	/2.04	.7467
Mf	59.46	9.5373	58.52	8.5125	/ .94	.3872
Pa	54.19	7.6441	52.48	8.4338	/1.71	.8282
Pt	54.54	8.7256	53.33	11.9387	/1.21	.4739
Sc	55.27	10.7642	56.05	8.1638	- .78	.2946
Ma	56.52	10.5468	59.43	8.1631	-2.91	1.1179

TABLE XII

MEANS, STANDARD DEVIATIONS, AND CORRESPONDING "t" VALUES  
OF MMPI SCORES FOR THE "LOWER HALF" OF  
MALE RETURNEES AND NON-RETURNEES

MMPI Keys	Returnees (N = 51)		Non-Returnees (N = 42)		Difference in Means	"t"
	Mean	S. D.	Mean	S. D.		
L	51.06	2.8029	52.38	4.4664	-1.32	1.7179
F	56.49	7.2976	54.38	5.7210	/2.11	1.5099
K	51.22	8.8877	53.50	8.3950	-2.28	1.2485
Hs	51.78	7.8875	50.79	8.0138	/ .99	.5915
D	53.47	10.0923	52.69	9.2933	/ .76	.3704
Hy	52.92	7.0053	54.24	6.2579	-1.32	.9382
Pd	56.69	9.2758	57.07	9.9349	- .38	.1883
Mf	57.96	10.1734	56.29	8.9123	/1.67	.8236
Pa	52.69	9.1967	52.67	6.6833	/ .20	.1163
Pt	58.20	11.4386	57.38	12.5250	/ .82	.3260
Sc	56.82	10.2844	57.21	10.6015	- .39	.1775
Ma	59.82	10.0213	60.05	11.0695	- .23	.1039

## CHAPTER V

### SUMMARY AND CONCLUSIONS

The purpose of this study is to analyze differences in scholastic aptitude and personality characteristics of "drop out" students and students who remain in college.

The following tests were employed in this study:

- A. The American Council on Education Psychological Examination, Form 1947, was employed for the purpose of determining the level of scholastic aptitude for each student.
- B. The Minnesota Multiphasic Personality Inventory was used for the purpose of securing personality profiles on each of the subjects. Personality profiles were determined in terms of student scores on each of the four validating keys and on each of the nine personality scales.

The subjects of this study consisted of 285 students who enrolled in the College of Arts and Sciences as entering freshmen in the Fall Quarter of 1948. There were 166 men and 119 women. For purposes of this study subjects were classified into two basic groups:

- (1) Returnee - Entering freshman student in the Fall Quarter of 1948 who returned to Montana State University in the Fall Quarter of 1949.

- (2) Non-Returnee - Entering freshman student in the Fall Quarter of 1948 who failed to return to Montana State University in the Fall Quarter of 1949.

In order to control differences in scholastic aptitude, students were further classified on the basis of their performance on the American Council on Education test:

- (1) Upper Half - Students whose scores on the ACE test placed them in the highest 50 per cent of entering students.
- (2) Lower Half - Students whose scores on the ACE test placed them in the lowest 50 per cent of entering freshman students.

A further classification of students was made in terms of sex. This scheme of classifying students resulted in eight distinct groups:

- (1) "Upper Half" Male Returnees - Male students in the highest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (2) "Upper Half" Male Non-Returnees - Male students in the highest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.
- (3) "Lower Half" Male Returnees - Male students in

the lowest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.

- (4) "Lower Half" Male Non-Returnees - Male students in the lowest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.
- (5) "Upper Half" Female Returnees - Female students in the highest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (6) "Upper Half" Female Non-Returnees - Female students in the highest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.
- (7) "Lower Half" Female Returnees - Female students in the lowest 50 per cent on scholastic aptitude who returned to Montana State University in the Fall Quarter of 1949.
- (8) "Lower Half" Female Non-Returnees - Female students in the lowest 50 per cent on scholastic aptitude who failed to return to Montana State University in the Fall Quarter of 1949.

The findings of this study indicate that:

- (1) A greater proportion of women drop out of school

than do men.

- (2) Female Returnees and Non-Returnees evidence no significant difference in mean ACE scores.
- (3) Male Returnees evidence a significantly greater mean score on the ACE Test as contrasted to the Non-Returnee group.
- (4) Female Returnees both in the "lower half" and "upper half" groups show significantly higher mean K scores on the Minnesota Multiphasic Personality Inventory, as contrasted to the Non-Returnees.
- (5) The female "upper half" Returnees show a significantly higher mean L score than the Female "upper half" Non-Returnees.
- (6) The female "upper half" Returnees show a significantly smaller mean Mf score than do the female "upper half" Non-Returnees.
- (7) Females in the "lower half" Returnee group show significantly greater mean scores on the Hs and Hy keys of the Minnesota Multiphasic Personality Inventory than do females in the "lower half" Non-Returnee group.

It is of interest to note that male students in contrast to the female students fail to show significant differences in personality characteristics between Returnees and



Non-Returnees. This is true whether we analyze the data for "lower half" males or "upper half" males. Whereas male Returnees and Non-Returnees are differentiated on the basis of their performance on the ACE test, female Returnees and Non-Returnees are not so differentiated. On the other hand, female Returnees and Non-Returnees show significant differences in personality traits.

In reviewing the findings of this study the following problems are suggested for further research.

In the present study an analysis was made entirely in terms of total scores on the MMPI. It may very well be that a separate analysis of each of the items on this personality inventory would yield data of significance and provide clues as to the more specific personality differences between Returnees and Non-Returnees.

A comparable study of Returnees and Non-Returnees in schools other than the College of Arts and Sciences should be made to determine whether the findings of this study apply to all students on the university campus.

A third study that could be carried out would be one involving a comparison of over-achievers and under-achievers in academic work. The same instruments and methods of research as employed in this study could be used in a comparative analysis of over-achievers and under-achievers.

This research indicates the need of more detailed

actuarial studies on student mortality and suggests that such analyses should be made separately for men and women.

## BIBLIOGRAPHY

The American Council on Education, Manual of Instructions.  
Washington, D. C.: The Council, 1946.

Bird, Charles, and Dorothy Bird, Learning More by Effective Study. New York: D. Appleton-Century Co., Inc., 1945

Blum, Milton L., and Benjamin Balinsky, Counseling and Psychology. New York: Prentice-Hall, Inc., 1951.

Edwards, Allen L., Statistical Analysis. New York: Rinehart and Co., Inc., 1946.

Fisher, R. A., Statistical Methods for Research Workers.  
Edinburgh: Oliver and Boyd, 1938.

Goodenough, Florence L., Mental Testing. New York: Rinehart and Co., Inc., 1949.

Hathaway, S. R., and J. C. McKinley, "A Multiphasic Personality Schedule: I. Construction of the Schedule," Journal of Psychology, 10:249-254, 1940.

\_\_\_\_\_, "A Multiphasic Personality Schedule: III. The Measurement of Symptomatic Depression," Journal of Psychology, 14:73-84, 1942.

\_\_\_\_\_, Manual for the Minnesota Multiphasic Personality Inventory. New York: The Psychological Corporation, 1943.

\_\_\_\_\_, Supplementary Manual for the Minnesota Multiphasic Personality Inventory. New York: The Psychological Corporation, 1946.

McKinley, J. C., and S. R. Hathaway, "A Multiphasic Personality Schedule: II. A Differential Study of Hypochondriasis," Journal of Psychology, 10:255-68, 1940.

\_\_\_\_\_, "A Multiphasic Personality Schedule: IV. Psychasthenia," Journal of Psychology, 26:614-24, 1942.

\_\_\_\_\_, "The Minnesota Multiphasic Personality Inventory: V. Hysteria, Hypomania, and Psychopathic Deviate," Journal of Applied Psychology, 28:153-74, 1944.

- McKinley, J. C., S. R. Hathaway and P. E. Meehl, "The Minnesota Multiphasic Personality Inventory: VI. The K Scale," Journal of Consulting Psychology, 22: January-February, 1948.
- Meehl, P. E., and S. R. Hathaway, "The K Factor as a Suppressor Variable in the Minnesota Multiphasic Personality Inventory," Journal of Applied Psychology, 30:525-64, October, 1946.
- McNeely, J. H., "College Student Mortality," United States Department of the Interior Public Affairs Pamphlet, Bulletin 11, 1937.
- MacIntosh, A., Behind the Academic Curtain. New York: Harper and Brothers, D. Appleton-Century Co., Inc., 1948.
- Richards, T. W., Modern Clinical Psychology. New York: McGraw-Hill Book Company, Inc., 1946.
- Washington State College, Tentative and Restricted Report on Student Mortality. Pullman, 1950.