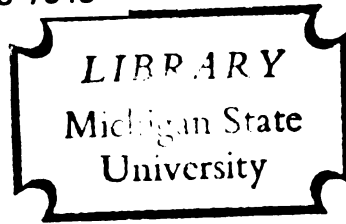


SOME OF THE PERSONALITY ATTRIBUTES
RELATED TO ACHIEVEMENT IN COLLEGE:
A COMPARISON OF MEN AND WOMEN STUDENTS

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY

Jean B. Zeaman
1956



This is to certify that the

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An investigation of some of the personality
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A comparison of men and women students.

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Jean Burgdorf Zeaman

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of the requirements for

Ph.D. degree in Psychology

M. Ray Denny
Major professor

Date December 10, 1956



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**SOME OF THE PERSONALITY ATTRIBUTES RELATED TO ACHIEVEMENT
IN COLLEGE: A COMPARISON OF MEN AND WOMEN STUDENTS**

By

JEAN B. ZEAMAN

A THESIS

**Submitted to the School of Graduate Studies of Michigan
State University of Agriculture and Applied Science
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

Department of Psychology

1956

ABSTRACT

This study sought primarily to distinguish between the non-intellectual factors associated with achievement in men compared to women. The M.M.P.I.'s of forty achieving and thirty-seven low achieving men, and forty achieving and forty-nine low achieving women, separated from an original random sample of 348 men and 367 women, were used in this study. The inventories had been administered by the college counseling center to students enrolled in Effective Living in the Fall of 1948. An analysis of performance on the nine clinical scales, and an anxiety and a repression scale was made, for these four groups. Two achievement scales, one for men and one for women were constructed. Most outstanding was the finding that men who were low achievers in college tended more to claim feelings of tension, anxiety, depression and insecurity than did men who achieved in college. No such difference obtained for the women in this study. This difference in expressed feelings of tension etc., between men achievers and low achievers does not seem to be simply the result of experiencing failure, and may in part be a factor in causing failure. Anxiety was more clearly related to performance for the men students than for the women students. Both low anxious men and women achieve the highest grades. However, none of the differences between the means for grade point average for the five different degrees of anxiety were significant for the women students, while the low and the intermediate low anxious men were significantly superior to the high anxious men in grade point average. It was suggested that the different roles, and

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consequently different social demands and expectations for men, as compared with women, may be conducive to more of a tendency for problems and conflicts to be expressed in the area of school achievement. It was also suggested that women low achievers may handle their conflicts in a different manner. Their tendency to express more phobic ideas and to be less independent rather than to express conscious conflict and insecurity, suggests some important personality differences which would bear further investigation.

Low achievers of both sexes were found to be significantly more hypomanic and less conventional than achievers. This was especially true of low achievers who had scored above average on the A.C. E. Low achieving men who scored above average on the A.C.E., did not show the signs of insecurity and tension that was characteristic of the low achievers with low A.C.E. scores. However, since these signs of maladjustment were as pronounced in men low achievers who were freshmen, directly from high school, at the time they took the M.M.P.I., as they were in men who had been at Michigan State a year before taking the M.M.P.I., it seemed reasonable to assume that their poor performance was in some part the effect of anxiety. This suggests that men may utilize school performance as a channel for the expression of conflicts as well as the fact that their performance in school tends more to be disrupted by anxiety.

More of the men students in both the achieving and low achieving groups show signs of maladjustment as reflected in

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elevated scores on the clinical scales, than do the men in the middle range of grade point averages. These two groups also show more such signs than do the corresponding groups of women students. There seems to be no difference in this respect between the average achievers- men or women. The greater pressures on men to achieve was offered as one possible explanation.

Both men and women achievers claim more efficient work habits, and attitudes more conducive to achievement in college.

ACKNOWLEDGMENTS

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CHAPTER I

HISTORICAL BACKGROUND: STATEMENT OF THE PROBLEM

The prediction of academic success or failure has been of interest to both the psychologist and the educator. Increased enrollment in colleges, accompanying striking changes in the social and economic scene, has stimulated further interest in this problem in recent years. The lag of available facilities behind the demand for higher education is becoming progressively more acute. Thus the process of selection of students is becoming increasingly important, as are investigations seeking the correlates of achievement. The reasons behind the failure to achieve are also of concern to college counseling centers.

In investigating the reasons for failure to succeed in college, it has gradually become apparent that there are non-intellectual factors which affect achievement. This is manifest in the all too frequently encountered discrepancies between ability and performance. Students of better than average ability may fail to succeed in college, whereas students of only mediocre ability oftentimes receive better than average grades. Clearly, unless these non-intellectual variables are taken into consideration, the degree of success in predicting achievement is substantially diminished.

In the search for the non-intellectual factors affecting achievement, a wide variety of independent variables have been correlated with college and high school grades. These include personal and social history, self adjustment ratings, physical stature, health,

study habits, to mention only a few. In the present study, we will be concerned only with self rating of adjustment and personality with particular emphasis on possible personality differences between men and women with respect to academic achievement. The male, is apt to approach academic achievement as a competitive affair, as bespeaks the role of aggressive mastery. The female, on the other hand, would more likely assume a passive-feminine role, as befits her future status of wife and mother. Such a role however, may be conducive to doing well in school. In fact, girls oftentimes do better in terms of grades, especially at the lower levels, simply because they are more passive and receptive and are less likely to diverge much on examinations from the course material as presented.

Thus, it is expected that in the comparison of men and women on the same level of achievement or lack of achievement, as the case may be, definite differences in motivation and personality will be found.

McClelland, et al. (18), in their extensive study of achievement motivation, found that, under conditions of related "success" and "failure", women show significant changes in their n(need) Achievement scores after being told that the performance was socially acceptable or unacceptable, as compared to being told nothing. None of the differences were significant for men students under the same conditions. This was in sharp contrast to the general findings of these investigators, that men's scores on n Achievement ratings are more easily influenced by attempts to arouse achievement motivation. The authors feel that the data suggest that women's need to achieve is tied up with social

acceptability, men's with leadership capacity and intelligence. The women's need for social acceptability they labeled n Affiliation.

Graff (8), in an investigation of the effects of varying levels of manifest anxiety upon intellectual performance, obtained a bow-type function, for the most part, between degrees of manifest anxiety as measured by the Welsh Anxiety Index for the M.M.P.I., and grade point average. However, the female members of the lowest anxiety group deviated from this pattern, achieving the highest grade point average of any of his sub-groups. Graff was not able, within the scope of his study to account for the superior performance of the low anxious women in his sample, but suggests either a higher need for affiliation, or masculine protest, as possible explanations.

These two studies point to some very basic differences with respect to the achievement variable when men and women are compared. Women are motivated more, it would seem, by the need to please, and less by the need to achieve, per se. Women who have negligible manifest anxiety may still be motivated to take in knowledge in order to please (the professor, father, boy friend, etc.) and consequently earn good grades, whereas a comparable absence of anxiety in the men students may produce low achievement as it reflects an absence of achievement drive and is unaccompanied by any additional motivation.

Gough (5) in an investigation of psychological femininity by means of an especially constructed questionnaire, containing items similar in many instances to M.M.P.I. items, suggests that the feminine personality is characterized by more responsiveness to social interaction and interpersonal relations, less interest in the

abstract social and political world, as well as less avowed intellectual curiosity and drive. Culturally, femininity is more frequently associated with this lack of intellectual drive. Konarovsky (17), in an investigation of this seeming lack of intellectual drive, suggests that it is a result in part of women being exposed to two contradictory roles - the so-called modern role and the feminine role. The women in her study felt to an overwhelming extent, that a display of intellectual interests was socially a disadvantage, especially on dates. A repeated study by Wallin (25) substantiates this feeling among women undergraduates, but the author does not feel that it is really a serious conflict for women students, nor that it is perpetuated in their more permanent relationships with men.

Leaving for a moment the possible sex differences in intellectual drive and achievement needs, let us review some of the studies which have been directly concerned with the personality correlates of achievement in terms of grades in college. In 1923, Stagner (27) in his review of the relevant literature found only negligible relationships between personality tests and grades. There was only a slight tendency for students with higher scores on tests for introversion, dominance and self sufficiency to obtain higher grade averages than for those with lower scores on these tests. Failure to obtain any significant relationships may well have been a function of the use of personality tests which were based on apriori methods of test construction, less discriminating and more subject to falsification.

The Minnesota Multiphasic Personality Inventory, which will be used as the means of assessing adjustment and personality traits in this study, was designed to overcome many of the drawbacks of

previous personality self-rating scales. The M.M.P.I. was constructed empirically. That is to say, the items finally chosen, were those correlated with various diagnosed syndromes such as paranoia, schizophrenia, hysteria, etc. Many of the items are subtle, and not immediately identifiable, with respect to the psychiatric group to which they belong. The self ratings obtained on the M.M.P.I. have been considered by their authors, as bits of verbal behavior, the non test correlates of which must be discovered by empirical means. What the individual says about himself is the diagnostic clue, not what really is the case. (23)

In this study we will then concern ourselves largely with what the achieving men say about themselves as compared to what achieving women say about themselves. Conversely the statements of self evaluation made by the low achieving men compared to the low achieving ~~women~~ will also be of interest.

Because it lends itself less to deliberate falsification, and because it yields several estimates of validity, the M.M.P.I. has frequently been used to get at the non-intellectual reasons behind the failure to achieve, in preference to other paper and pencil tests.

Using a group of 164 male engineering freshmen, Owens (26) administered the 300 diagnostic items on the M.M.P.I., along other items, predicted averages on the basis of A.C.T. scores, and placed subjects into three groups: underachievers, overachievers, and average achievers. Thirty-eight items, seven from the M.M.P.I. were isolated for discriminatory ability. Of these, fifteen dealt

directly with social adjustment. The items were not treated as a scale however. Owens concluded that underachievers were too socially oriented, perhaps too active, and that a slight tendency towards depression, worry and psychic tension was a consequence of poor achievement rather than a cause of it.

Altus (2) also employed the technique of item analysis on the M.M.P.I., in an attempt to find significant relationships between responses to personality test items and achievement as measured by grade point average. Achievers and non-achievers were identified by a discrepancy between scores on a measure of verbal aptitude and an achievement test in psychology, after two semesters of work. Altus constructed a scale of sixty items which he felt revealed trends of greater femininity, immaturity, fearlessness, self assertiveness and manic tendencies for the underachieving group; introversive tendencies for the achieving group. The only difference between the two groups on the clinical scales was on the hypomania (Ma) scale, where underachievers scored higher. When these sixty non-intellective items were administered to a new group of eighty-five students, they correlated .39 with the criterion of psychology grades used in the initial part of the study. However, only 21 of Altus' items were significant at the .05 level, and his achieving group consisted of twenty-two men and three women, which if the main premise of this study is true, namely that the personality attributes associated with achievement differ for the two sexes, could be expected to cause considerable distortion of results.

Gough (6) in a study of high school seniors, matched pairs for sex and score on the Otis, and then divided them into achievers and non-achievers on the basis of a three year honor point average. Both groups had individuals of quite high and quite low intelligence as measured by the Otis. Gough found high school achievers to agree more with items on the I.M.P.I. suggesting more conformity to social norms, to admit of more symptoms of moderate tension, anxiety, insecurity and a somewhat suspicious attitude towards others, to claim more efficient interpersonal behavioral skills, and to express more feminine tendencies. Gross abnormalities were denied. Treating his items as a scale, Gough found an r of .11 with the Otis I.Q. Using a new group, Gough obtained an r of .25 between honor point ratio and his achievement scale, suggesting that the scale does have some validity with other groups.

Kahn and Singer (14) found non-successful New York University male commerce students to be significantly above the norm mean on the schizophrenia scale, and both successful and non-successful students to be significantly above the mean on the Interest Scale, indicative of a trend in the direction of feminine interest patterns.

Griffiths (9) also investigated the relationship between scholastic achievement and personality adjustment. His study, using Ohio University male freshmen as subjects, and the Bell Adjustment Inventory, yielded no significant differences in adjustment between men on academic probation and men of superior college ability. Men with brilliant records seemed no better adjusted than those with the lowest records. However, there was a tendency for the very unsatisfactorily adjusted students to get higher grades than men of excellent emotional adjustment. These differences were not statistically significant.

Morgan (25) in a study of male sophomores, all with high A.C.E. scores, divided into high, average and low achievers on the basis of their grades, found elevations on the psychopathic deviate and paranoid scales of the M.M.P.I. to be less frequent in the profiles of low-achieving men.

Clark (2) by means of an item analysis constructed a scale of fifty-six items from the M.M.P.I. which differentiated achieving women college students from underachieving women students. A significant discrepancy between A.C.E. score and grade point average was found to be an indication of either over- or underachievement. Clark found the achieving women to have more positive attitudes, fewer paranoid inclinations, while poor achievers were more likely to admit hypochondric tendencies and psychosomatic complaints. Non-achieving women in this study were also found to express more self-centered attitudes. Ten of Clark's items correlated with those of Altus, who used a mixed population in which the achieving group was predominantly composed of men, the underachieving group predominantly women. Six other items were found on both scales but were answered in opposite directions.

Vinball (15) using the sentence-completion test to assess the emotional adjustment of adolescent boys in residence in a prep school, found that a significantly higher number of underachievers revealed significant negative relationships with their fathers. Their aggressive feelings were a source of guilt and anxiety more frequently than in the total population, and they were less able to give direct, effective expression to their negative feelings.

unroe (14) using her Horseshoe Inspection Technique, studied a group of 525 students in a women's college with respect to adjustment and academic performance. Her check list yields a general adjustment rating of demonstrated validity. Unroe found her adjustment rating to be very successful in predicting success in college when combined with A.C.M. scores. When both the A.C.M. score and the adjustment rating were in the same direction, either both good or both poor, her predictive success was almost perfect. No well adjusted girl with a good A.C.M. score failed in college. The group of girls with adequate adjustment ratings but low A.C.M. scores, included a group which contained neither superior scholars nor outright failures. Lastly, the most unpredictable group of all was that group composed of individuals with poor adjustment ratings and high A.C.M. scores. Unroe noted that the majority of this group called "Academic Failures" or "Poor" this group, which also contributed more than its quota of "Just passes." Unroe feels that while these individuals are poor risks, they can all be eliminated only on the expense of excluding many who would perhaps go on to succeed in some of the more erratic occupations such as being artists, aviators, etc.

Loyt and Jordan (15) in their study of the relationship of maladjustment to achievement, used a modified profile analysis for the M.M.P.I. Definite maladjustment was taken to be indicated in an individual record in two or more clinical scales of 70 or over (T score). The 4. scale was excluded. Lesser maladjustment was indicated by the presence of one peak of 70 or over, while a normal profile was defined as one with no T scores of more than 60. In this way, the authors provide a crude measure of degree of maladjustment by the height of the profile, although the validity of this method in understanding of the specific maladjustment aspect or even of the relation of one score to

another reason the elevation of a single scale score. They are not test-retest but test-retest measures low scores and underachievement.

Arthur Hart (16) in a study of malfunctioning students of good ability (tested at the counseling center) who were referred for counseling, found that very high academic failure seemed to have meaning in terms of the unconscious satisfaction of intense hostility towards their families. The psychiatrist connected with student health center noted a combination of depressive and compulsive features in the low achievers. He found these students to be pervasively resistant on an unconscious level to any externally imposed task. He feels that while these students were able to function in the more structured high school situation, the unstructured environment of a university, where the incessant pushing of parents and teachers may be largely absent, results in a breakdown of their previous "grudging achievement." At this point, their resistance to authority begins to manifest itself in failure. The next most frequent group seen by the college psychiatrist, were those whose M.M.P.I. profiles (administered in the counseling center upon referral) were characterized by a spike on the hysteria scale. They are described as basically "hysterical personalities". They are not characterized by depression or self derogation as were the previous group described here, but rather prone to repression and suppression of any emotional problems. No differentiations were made in this study between men and women students, and the data as presented did not admit of any analysis along those lines. However, from what we know clinically, it seems likely that more of the women low achievers would be found in the hysterical group, more of the men in the "rebellious" group. The greater tendency on the part of women to

employ repression as major defense mechanism, may give rise to very different self ratings on a personality questionnaire such as the M.M.P.I. when achievers and nonachievers of both sexes are compared.

George Welsh* has developed an anxiety scale* which he considers a better measuring instrument than his anxiety index (29) the latter having been demonstrated to have clinical validity. At the same time he has developed a repression scale, and feels that the use of both this scale is more illuminating in terms of personality functioning than either alone, i.e., low anxiety coupled with low repression is found frequently in psychotic reactions, etc. In this study both these scales will be employed in this type of analysis.

It appears that there is very little which is relevant to the main problem of this study, namely the differences between men low achievers and women low achievers. There seems to be considerable agreement among the different investigators that students who are referred to college counseling centers because of failure are frequently found to be quite maladjusted. Moreover, there is considerable agreement that underachievers of both sexes tend to be somewhat hypomanic, while achievers seem more conforming, introversive, and tending towards more feminine interest patterns. However, none of these investigations are very illuminating with respect to the problem being investigated here. Rather, it seems to have been assumed that the non-intellectual factors are, in all important aspects, sufficiently similar in both sexes to warrant simply controlling possible minor fluctuations by including an equal number of men and women in the groups being compared, or by basing conclusions on all male groups.

*personal communication

If we extend these assumptions further, we would have to contend that the motivation to achieve in college is also largely identical for men and women. It is precisely this implicit assumption that this investigation takes issue with. If there are significant differences between the self ratings of male and female achievers and of male and female low achievers, then the use of the same scale to predict achievement for both sexes will reduce predictive success.

The purpose of this study will then be two-fold: 1) to determine what personality differences related to achievement in college there are, if any, for the two sexes: 2) to construct two personality scales which are related to achievement, one for men and one for women, to provide increased success in predicting performance in college.

CHAPTER II

HYPOTHESIS

Personality and role differences between men and women lead us to expect measurable differences between men and women in the non-intellectual factors associated with achievement. For the most part, the identification of these differences must be approached through empirical means. However, personality theory and previous related investigations, both of which were discussed in the previous chapter, provide some definite expectations, which will now be formulated as hypotheses.

Hypothesis I: The self ratings characteristic of men achievers will be different from the self ratings characteristic of women achievers. This probably reflects a difference in both the personality traits associated with achievement in the two sexes and the motivations behind the need to achieve.

Hypothesis II: In both sexes, a feminine interest pattern will tend to be associated more with academic achievement than a culturally masculine one.

Hypothesis III: Women achievers will be more concerned with interpersonal relations and less with intellectual mastery than men achievers. For men achievers, the reverse pattern is expected, with the men showing a decided trend towards introversion. This is predicted because achievement in women is determined more by the desire to achieve for its own sake, while the opposite is deemed true of men.

Hypothesis IV: Students of both sexes who do not achieve will evidence more obvious maladjustment than students who do achieve.

However, the manifestations of maladjustment will be different for the two sexes. Women low achievers will tend more to rely on excessive repression, which has been noted clinically to be incompatible with achievement; whereas men low achievers will tend to belong more in the group characterized by rebellion against authority.

Hypothesis V: Anxiety will have a differential effect on achievement depending on the sex of the student. Low anxiety in women will be related to high achievement, whereas low anxiety in men will be related to low achievement.

CHAPTER III

PROCEDURE

Minnesota Multiphasic Inventories administered by the college counseling center to an unselected group of students enrolled in Effective Living at Michigan State College in the Fall of 1948 were used in this investigation. Since the male students far outnumbered the females, a random sample was selected from the inventories of the male students, to roughly equate the number in each group. Those with invalid L, F^1 , $F-K^2(12)$ scores were eliminated. Twenty-seven students who had dropped out before the end of the semester and consequently had not been graded were also eliminated. The final population consisted of 348 male students and 307 female students.

Composition of the Population

Age: The mean age for the women students was 18.4. Only eight women were over 21 years of age, only thirty were over 19. Thirty-four women neglected to indicate their age on the test blanks, as requested.

The mean age of the male students was 20.7. Ninety-six of the male students were over twenty-one. Twenty-six neglected to indicate their ages. No male student indicated an age of over 35.

-
1. Validity scales
 2. An index developed by Gough (12) which has been shown to be more effective in detecting invalid records than either F or K taken alone.

Date of entering college: Date of entry was determined from the listing of A.C.E. scores. 288 of the women students had just entered Michigan State at the time they took the M.M.P.I. Forty-seven had entered the previous fall, and thirty-eight were not included in the listings, having not taken the A.C.E.

185 of the men students had entered in the fall of 1948 and took the M.M.P.I. at that time. Ninety-eight had entered the year before, seven had entered two years before, and fifty-eight were not included in the listings, not having taken the A.C.E. examination.

The men students were therefore, both older and further along in college than the women, at the time they took the M.M.P.I. The age difference is probably a function of army service. The difference in entry data is largely a function of programming by the basic college resulting in men students frequently taking Effective Living in their second year of college and consequently were given the M.M.P.I. later in their college career than the women students.

The data for the entire population is presented to give a general idea of what the composition of this initial group was. With a group this size, it is reasonable to assume that the individuals for whom no data of date of entry into the college or age was obtained would distribute themselves randomly in approximately the same proportions as the majority of the population, for whom these data were obtained. Complete data could be obtained, but the fact that the entire group is not going to be the main focus makes this unnecessary. There is no reason to assume that there is anything of the nature of a significant omission involved in

in failure to include their age, or failure to take the A.C.E. examination. In 1946, the college did not require transfer students to take the examination. Therefore, failure to take the examination cannot be construed to mean disregard for rules, evasion, etc., except perhaps in a very small number of cases.

A.C.E. Scores:¹ Scores were available for 290 of the male students, and 325 of the female students. The women averaged 5.19, the men 5.30. There was no significant difference ($t = .86$) between male and female students on A.C.E. scores for the initial groups.

Criterion for Selection of Achievers and Low-achievers

The mean grade point average for the 367 female students, for their entire college career was 2.26, with a standard deviation of .58; for the male student 2.24; with a standard deviation of .52. The two groups are, therefore, seen to be essentially equal in college achievement.

One standard deviation above the mean grade point average of his or her group was taken to indicate achievement, whereas one standard deviation below the mean grade point average of his or her own group was taken to indicate low achievement. In this manner, four subgroups were formed: male and female achievers, male and female low achievers.

1. Expressed in decile ranks

TABLE I

COMPOSITION OF THE FOUR SUBGROUPS
WITH RESPECT TO AGE, DATE OF ENTRY AND
A.C.E. SCORES WHEN AVAILABLE

	N	Mean Age	Date of entry (%)				A.C.E. Scores	No. of A.C.E. Scores Available
			1948	1947	1946	1945		
			%	%	%			
Achieving Men	40	20.7	62.5	27.5	10.0	-	6.95	39
Low Achieving Men	37	20.3	64.9	32.4	2.7	-	4.53	36
Achieving Women	40	18.4	82.5	17.5	-	-	7.16	38
Low Achieving Women	49	18.4	83.7	16.3	-	-	4.00	44

The men, both achievers and low-achievers are a somewhat older group, and more of them were in their second year of college at the time they took the M.L.P.I. However, comparing the men, achievers with low-achievers, and the women achievers with low-achievers, there is no appreciable difference either in age, or the date of entry. On A.C.E. score, however, there is an appreciable difference between achievers and low-achievers for both sexes. There does not seem to be any reliable difference between achievers, men or women or low-achievers, men or women.

Scoring the Inventories

The entire 715 inventories, 348 men and 367 women, were machine scored for the nine clinical scales and the validity scales



expecting the ? score, by the college scoring office. The inventories were examined for ? score and any with more than 60 items unanswered were eliminated. In addition to these scales, the inventories were also scored for Welsh's Anxiety Scale and Welsh's Repression Scale.* No T scores are as yet available for these scales and consequently the raw scores were used. Mean T scores were computed for the 9 clinical scales and Welsh's Anxiety and Repression Scales for both the original groups of men and women and for the achievers and low achievers of both sexes. Comparisons between these 11 mean scores were made between men and women students for the original sample and the sub groups.

A count was also made of the number of inventories with one or more T scores above 65 on any of the clinical scales (excepting the Interest scale) for: 1) the original groups of 348 and 367 women, 2) each of the 4 sub groups - men achievers and low achievers, women achievers and low achievers and 3) the average achievers (falling within $\pm 1\sigma$ of the mean grade point average) - men and women. The mean K score for these groups was also computed to determine whether the inventories were spuriously high for any or all of these groups.

The Manifest Anxiety Measure

The entire sample of 348 men and 367 women were divided into 5 groups according to the Welsh Anxiety Index. These groupings are presented in Tables II and III.

*These scales were obtained from Dr. Welsh in a personal communication. Dr. Welsh considers the anxiety scale a better measuring instrument than the Anxiety Index (29) particularly when it is combined with the repression scale. Both scales and normative figures are to be found in the Appendix.

TABLE II

THE DIVISION OF THE MEN STUDENTS
ACCORDING TO THE WELSH ANXIETY SCALE

Group	Welsh Scale	N	Percent
Low Anxiety	0 - 6	69	19.83
Low Intermediate	7 - 11	79	22.70
Middle	12 - 15	67	19.25
High Intermediate	16 - 21	70	20.11
High Anxiety	22 - 39	63	18.11
TOTAL		348	100.00

TABLE III

THE DIVISION OF THE WOMEN STUDENTS
ACCORDING TO THE WELSH ANXIETY SCALE

Group	Welsh Scale	N	Percent
Low Anxiety	0 - 7	69	18.80
Low Intermediate	8 - 11	81	22.07
Middle	12 - 15	69	18.80
High Intermediate	16 - 21	76	20.71
High Anxiety	22 - 39	72	19.62
TOTAL		367	99.20

These groups were then compared with respect to mean grade point average.

Item Analysis

The number of individuals answering "yes" to each of the 566 items on the M.I.P.I. was tallied for each of the four subgroups -



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men achievers, women achievers, men low achievers, women low achievers. Percent true was computed for each item. An item was considered to differentiate between achievers and non-achievers if t , the significance of the difference between percentages, reached or exceeded the .05 level. In this way two scales designed to predict achievement were constructed - one for men students and one for women students. An attempt was made to statistically test these scales for validity. The item analysis, however, was not undertaken solely to permit the construction of an achievement scale. It was intended to get at the differences in self rating of men achievers as compared to women achievers, and men low achievers as compared to women low achievers, which is the main concern of this study.

The Intelligence Factor (as measured by the A.C.E. score)

Each of the four sub-groups, achievers men and women, low achievers, men and women, were divided again into those with A.C.E. scores of 7-10. This division was made to ~~exclude~~ the middle or average group with A.C.E. scores of 5 and 6.

The mean scale scores were computed for each of the groups, and comparisons made between:

- 1) low achieving men with low and low-achieving men with high A.C.E. scores
- 2) high achieving men with low and high-achieving men with high A.C.E. scores
- 3) low-achieving men compared to high-achieving men, both with low A.C.E. scores
- 4) low-achieving men compared to high-achieving men, both with high A.C.E. scores

The same four comparisons were also made for the women students.

CHAPTER IV

RESULTS

The Clinical Scales

The mean T scores on the nine clinical scales of the M.M.P.I. for the two original populations of men and women are presented in Table IV. Of these nine scales, six show a difference between men and women significant at the .01 level or better. The women students score higher on the Hy¹ and Pa scales, the men score higher on the D, Ma, Pd and Mf scales. All mean T scores are well within 'normal' limits - i.e. do not exceed a T score of 60. However, the men students mean T score on the Mf scale of 59.60 falls very close to this limit.

The mean T scores on the nine clinical scales for the men achievers and the men low-achievers, are presented in Table V. Differences significant at the .05 level were found on the Sc, Pa, and Pd scales, with the low achievers exceeding the achievers on all three of these scales. Here again, all mean T scores, excepting the mean of the Mf scale, fall below 60. The achieving men obtained a mean t score of 61.55 on the Mf scale.

The mean T scores on the nine clinical scales for the women achievers and the women non-achievers are presented in Table VI. There is only one significant difference, and that occurs on the Mf scale, with the non-achieving women averaging a higher T score than the achiev-

¹Hy - Hypochondriasis, D - Depression, Hy - Hysteria, Pd - Psychopathic Deviate, Mf - Interest Scale, Pa - Paranoia, Pt - Psychosthenia, Sc - Schizophrenia, Ma - Hypomania

ing women. However, since this is the only significant difference obtained in nine comparisons, and since it only just exceeds the .05 level of confidence, it is quite possibly a chance difference.

TABLE IV

MEAN T SCORES ON THE NINE CLINICAL SCALES
OF THE M.M.P.I., AND MEAN SCORES ON THE WELSH
ANXIETY AND REPRESSION SCALES FOR THE M.M.P.I.,
FOR THE ENTIRE POPULATION

Scales	Men		Women		Differ- ence	t	Level of Signifi- cance
	N - 348	Standard Mean Deviation	N - 367	Standard Mean Deviation			
Hs	34.60	10.44	34.15	7.68	.45	-	-
Hy	51.60	11.60	54.00	8.14	2.40	3.20	.01 level
D	54.15	11.78	50.55	9.84	3.60	4.39	.01 level
Pt	33.25	12.33	34.10	11.36	.85	-	-
Mf	59.60	9.51	49.95	8.90	9.65	13.98	.001 level
Ma	55.10	9.97	50.80	11.35	4.30	5.37	.01 level
Sc	34.10	11.21	34.25	10.93	.15	-	-
Pa	52.60	9.13	54.55	8.94	1.95	2.87	.01 level
Pd	45.00	9.96	37.85	10.20	7.15	9.53	.001 level
A	13.94	7.04	14.42	7.18	.48	-	-
R	13.76	7.22	15.88	7.09	2.12	3.93	.01 level

TABLE V

MEAN T SCORES ON THE NINE CLINICAL SCALES
OF THE M.M.P.I. AND MEAN SCORES ON THE WELSH
ANXIETY AND REPRESSION SCALES FOR THE M.M.P.I.,
FOR THE MEN ACHIEVERS AND LOW ACHIEVERS

Scales	Men Achievers (N = 40)		Men Low Achievers (N = 37)		Differ- ence	t	Level of Signifi- cance
	Mean	Standard Deviation	Mean	Standard Deviation			
Hs	35.51	10.62	38.40	11.59	2.89	1.14	
Hy	55.18	8.35	54.06	9.37	1.12	-	
D	54.73	13.26	55.78	14.08	1.03	-	
Pt	32.20	13.15	37.42	15.01	5.22	1.62	
Mf	61.55	11.16	58.26	9.28	3.29	1.41	
Ma	54.47	11.15	57.84	10.67	3.37	1.36	
Sc	32.19	15.06	39.14	11.69	6.95	2.25	.05
Pa	51.74	8.30	56.44	11.22	4.70	2.07	.05
Pd	43.82	10.11	48.92	10.46	5.10	2.17	.05
A	12.71	8.34	17.00	7.90	4.29	2.32	.05
R	13.42	3.29	14.65	3.53	1.23	1.57	

TABLE VI

MEAN T SCORES ON THE NINE CLINICAL SCALES
OF THE M.M.P.I. AND MEAN SCORES ON THE WELSH
ANXIETY AND REPRESSION SCALES FOR THE M.M.P.I.,
FOR THE WOMEN ACHIEVERS AND LOW ACHIEVERS

Scales	Women Achievers (N = 40)		Women Low Achievers (N = 49)		Differ- ence	t	Level of Signifi- cance
	Mean	Standard Deviation	Mean	Standard Deviation			
Hs	35.05	8.52	36.20	9.87	1.15	—	—
Hy	53.43	8.38	56.90	11.76	3.47	1.62	—
D	52.20	9.96	51.70	11.35	.50	—	—
Pt	34.60	12.25	35.60	11.62	1.00	—	—
Mf	46.09	7.96	49.60	6.94	3.51	2.19	.05
Ma	52.00	10.10	51.22	12.87	.78	—	—
Sc	34.79	10.96	35.90	12.14	1.11	—	—
Pa	55.10	6.89	53.04	9.58	2.06	—	—
Pd	37.00	12.52	41.50	10.57	4.50	1.76	—
A	14.53	6.08	15.80	7.28	.81	—	—
R	14.65	3.75	15.64	3.32	1.29	—	—

TABLE VII
 MEAN T SCORES ON THE NINE CLINICAL SCALES
 OF THE M.M.P.I. AND MEAN SCORES ON THE WELSH
 ANXIETY AND REPRESSION SCALES FOR THE M.M.P.I.,
 FOR THE LOW ACHIEVERS - MEN AND WOMEN

Scales	Men Low Achievers Mean T Score	Women Low Achievers Mean T Score	Differ- ence	t	Level of Signifi- cance
Hs	38.40	36.20	2.20	-	-
Hy	54.06	56.90	2.84	-	-
D	55.78	51.70	4.08	1.58	-
Pt	37.42	35.60	1.82	-	-
Mf	58.26	49.60	8.66	4.78	.01
Ma	57.84	51.22	6.62	2.53	.05
Sc	39.14	35.90	3.24	-	-
Pa	56.44	53.04	3.40	-	-
Pd	48.92	41.50	7.42	3.02	.01
A	17.00	15.80	1.20	-	-
R	14.65	15.64	.99	-	-

TABLE VIII

MEAN T SCORES ON THE NINE CLINICAL SCALES
OF THE M.M.P.I. AND MEAN SCORES ON THE WELSH
ANXIETY AND REPRESSION SCALES FOR THE M.M.P.I.,
FOR THE HIGH ACHIEVERS - MEN AND WOMEN

Scales	Men Achievers Mean T Score	Women Achievers Mean T Score	Differ- ence	t	Level of Signifi- cance
Hs	35.51	35.05	.46	-	-
Hy	55.18	53.43	1.75	-	-
D	54.73	52.20	2.53	-	-
Pt	32.20	34.60	2.40	-	-
Mf	61.55	46.09	15.47	6.62	.01
Ma	54.47	52.00	2.47	-	-
Sc	32.19	34.79	2.60	-	-
Pa	51.74	55.10	3.36	1.96	.05
Pd	43.82	37.00	6.82	2.61	.05
A	12.71	14.53	1.82	1.09	-
R	13.42	14.65	1.23	-	-

The mean T scores on the nine clinical scales for the low achievers, men and women, are presented in Table VII. Differences significant at better than the .01 level were found on the Mf, and Pd scales. The difference between the men and women low achievers on the Ma scale is significant at better than the .05 level. All differences involve higher mean scores for the men low achievers.

The mean T scores on the nine clinical scales for the high achievers, men and women, are presented in Table VIII. Differences significant at the .05 level or better were found on both the Mf and the Pd scale. The difference on the Pa scale did not quite reach the .05 level.

Profiles With Deviant Scores on the Clinical Scales

Since, excepting the Mf scale, the mean T scores for all groups did not exceed sixty, an analysis of the individual profiles was made to determine the number of individuals in each of the four sub groups who had profiles with one or more extreme score. A T score of sixty-five or over was considered a deviant score for this college population. The Mf scale was excluded from this analysis and will be considered separately. This was done for two reasons: 1) the Mf scale is not really a clinical scale in the same sense that the other scales are, but is rather largely an interest scale; 2) it has not been demonstrated that clinically the scale has similar significance with women.

These data on number of profiles with one or more deviant score are presented in Table IX.

A relatively small number of either men or women, achievers, low achievers or individuals in the middle group with respect to achievement, had profiles with two or more elevated scores, other than on the Mf scale. None of the differences are significant.

Considering the profiles with one or more T scores of sixty-five or over, we see that the low and high achieving men both have significantly more such profiles than the men with grade point averages which fall within one standard deviation of the mean. Chi square for the sum of the high and low men achievers having profiles with one or more elevated score compared to the number of profiles in the middle range of achievement with one or more such elevations, is 10.65, which is significant at better than the .01 level of confidence. No such difference obtains for the women students.

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Comparing the men with the women, we find that the entire sample of men students, have more profiles with deviant scores, excluding the Mf scale, than the entire sample of women students. Chi square is 6.95, which is significant at the .01 level. There is also a significant difference between the achieving and low-achieving men taken as a group, and the achieving and low-achieving women taken as a group. The men students have more profiles with deviant T score(s). Chi square is significant at greater than the .01 level. There is not a significant difference between the middle achieving men and the middle achieving women.

The K Scale

Table X presents the mean raw scores for the K scale for 1) men and women in the entire sample with T scores of sixty-five or over on any of the clinical scales excepting the Mf scale; 2) men and women, achievers and low-achievers, with profiles having one or more such elevations. This analysis is designed to detect those profiles which are spuriously high. (22) The means in each of these groups are essentially the same. A count of the number of profiles with a K score less than T - thirty-five is also indicated.

The Mf Scale

The number of profiles with an Mf score of T- sixty-five or over for the low, middle and high achieving men was eight or 21.6% for the low, eighty-two or 30.3% for the middle, and sixteen or 40% for the high. For the women, there were only a total of fifteen such elevations, two or 4.1% for the low, thirteen or 4.7% for the middle group, and none for the high group. Chi Square between the low and high men is 2.98, significant at only the .10 level.

TABLE X

COMPARISONS OF THE MEAN RAW K SCORES FOR THOSE
PORTIONS OF THE DIFFERENT GROUPS HAVING PROFILES
WITH ONE OR MORE T SCORE OF SIXTY-FIVE OR OVER
ON ANY BUT THE MF SCALE

	N	Mean (Raw) K	No. Profiles Where K = Four or Less
Men	144	12.44	1
Women	113	13.21	0
Achiever - Men	21	11.86	0
Low-Achiever - Men	21	11.10	0
Achiever - Women	14	12.50	0
Low-Achiever - Women	19	12.84	0

The Manifest Anxiety Measure

High and low anxiety scale scores were empirically determined for men and women separately. These data were presented in Tables II and III. The mean anxiety score for the entire group of men compared to the entire group of women, shows only a negligible difference. (see Table IV) However, the low achieving men are significantly more anxious as measured by this scale, than the achieving men. No such difference obtains for the women. (see Tables V - VI)

The relationship between anxiety and grade point average is presented in Table XI. The F of 2.50 is significant at the .05 level. The low and intermediate anxious men have significantly higher mean grade point averages than the high anxious men. The comparison between the middle

TABLE XI

COMPARISONS OF MEAN GRADE POINT AVERAGE
BETWEEN GROUPS WITH VARYING LEVELS OF ANXIETY

	N	Mean	Middle	Inter- mediate	High	
MEN	Low Anxious	69	2.35	1.89	-	2.46
	Low Intermediate	79	2.32			2.18
	Middle	67	2.17			
	High Intermediate	70	2.20			
	High Anxious	63	2.14			
						F = 2.50
WOMEN	Low Anxious	69	2.35			
	Low Intermediate	81	2.22			
	Middle	69	2.24			
	High Intermediate	76	2.22			
	High Anxious	72	2.22			
						F = .73

anxious group and the low anxious group did not reach the .05 level. A similar analysis for the women, yielded an F of .73, which falls far below the .05 level. An examination of this table reveals that while there is almost an inverse linear relationship between anxiety scores and grade point averages for men (only a few of the points are significantly different), the mean grade point averages in the 5 groups for the women, are all the same, excepting that of the low anxious. The low anxious individuals, both men and women have the highest grade point average, (both

2.35) but the high anxious women do not show the marked decline in grade point average that the high anxious men do.¹

The Repression Measure

The mean repression score for the entire group of women is significantly higher (.01 level) than the mean score for the entire group of men. No differences were found between achievers and non-achievers of either sex for this scale. However, when we consider only the students with anxiety scale scores of 20* or over, the achieving men have a significantly higher repression score than the non-achieving men. The situation is largely reversed for the women students, with the low-achieving women having a higher mean repression score. This difference does not, however, reach the .05 level of significance. These data for the repression scale are presented in Table XII.

¹ The discrepancy in grade point average between low anxious men and low anxious women which Graeff's data showed, was not obtained.

* 20 was arbitrarily chosen as indicative of high anxiety, although elsewhere in this study, 22 was taken to be the lower limit of the high anxious group. This was done to raise the N for the achieving men and permit a statistical test of significance.

TABLE XII

MEAN REPRESSION SCORES FOR MEN AND WOMEN, ACHIEVERS
AND LOW-ACHIEVERS WHO HAD ANXIETY SCORES OF TWENTY OR MORE

	N	Mean Anxiety Score	Men Repression Score	Differ- ence	t	Level of Signifi- cance
Achieving Men	7	24.28	15.00	3.07	2.84	.05
Low-Achieving Men	14	24.86	11.93			
Achieving Women	10	25.40	12.90	3.19	2.06	.10
Low-Achieving Women	11	26.64	16.09			

The Item Analysis

Table XIII and XIV present the items which differentiated men achievers from men low-achievers, and women achievers from women low achievers.

An investigation of these two groups of items, suggested the following clusters.

MEN

I. Low achieving men tend more to agree with statements indicating lessened ability to concentrate, and lessened efficiency.

1. I find it hard to keep my mind on a task or job.
16. I cannot keep my mind on one thing.
17. I have more trouble concentrating than others seem to have.
12. I work under a great deal of tension.

II. Low achieving men tend to agree with statements which suggest

impulsiveness, irritability, and somewhat troublesome social behavior.

6. In school I was sometimes sent to the principal for cutting up.
5. I do many things which I regret afterwards (I regret things more or more often than others seem to).
9. My parents have often objected to the kind of people I went around with.
10. I get mad easily and then get over it soon.
- 19 I am often said to be hot headed.

TABLE XIII

ITEMS ON THE M.M.P.I. WHICH DISCRIMINATED BETWEEN
THE ACHIEVING AND LOW-ACHIEVING MEN AT THE .05 LEVEL OR BETTER

"Yes" Answers	t	ITEM
.37-.62*	2.27	1. I find it hard to keep my mind on a task or job.
.23-.46	2.17	2. I have had very peculiar and strange experiences.
.58-.35	2.09	3. I sometimes keep on at a thing until others lose their patience with me.
.43-.70	2.50	4. I do not mind being made fun of.
.40-.70	2.78	5. I do many things which I regret afterwards (I regret things more or more often than others seem to).
.30-.68	3.60	6. In school I was sometimes sent to the principal for cutting up.
.50-.76	2.46	7. I like to cook.
.93-.65	3.18	8. I like science.
.10-.35	2.80	9. My parents have often objected to the kind of people I went around with.
.25-.49	2.25	10. I get mad easily and then get over it soon.
.15-.51	3.61	11. Most people make friends because friends are likely to be useful to them.
.20-.46	2.51	12. I work under a great deal of tension.
.30-.54	2.35	13. In school I found it very hard to talk before the class.
.80-.57	2.14	14. I think nearly anyone would tell a lie to keep out of trouble.

*The number given first is the percent of yes answers for the achievers; the second number is the percent of yes answers for the low achievers.

.15-.35	2.08	15. I worry over money and business.
.18-.41	2.27	16. I cannot keep my mind on one thing.
.20-.46	2.51	17. I have more trouble concentrating than others seem to have.
.35-.68	3.07	18. I feel sure that there is only one true religion.
.08-.38	3.46	19. I am often said to be hot headed.
.17-.38	2.11	20. The future is too uncertain for a person to make serious plans.
.90-.70	2.25	21. I am not easily angered.
.48-.73	2.33	22. People have often misunderstood my intentions when I was trying to put them right and be helpful.
.35-.62	2.46	23. I have often met people who were supposed to be experts who were no better than I.
.15-.38	2.35	24. I deserve severe punishment for my sins.
.30-.59	2.67	25. If given the chance, I would make a good leader of people.
.53-.24	2.75	26. I like to attend lectures on serious subjects.
.18-.49	3.30	27. I do not try to correct people who express an ignorant belief.
.38-.68	2.75	28. I am often sorry because I am so cross and grouchy.
.78-.54	2.28	29. I have never been made especially nervous over trouble that any member of my family have gotten into.
.38-.62	2.16	30. I readily become one hundred percent sold on a good idea.
.43-.68	2.28	31. 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.
.43-.68	2.28	32. I very much like horseback riding.
.68-.89	2.33	33. I have very few headaches.

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TABLE XIV

ITEMS ON THE M.M.P.I. WHICH DISCRIMINATED BETWEEN
ACHIEVING AND LOW-ACHIEVING WOMEN AT THE .05 LEVEL OR BETTER

"Yes" Answers	t	ITEM
.18-.39	2.26	1. I enjoy a race or game better when I bet on it.
.30-.59	2.86	2. I commonly wonder what hidden reason another person may have for doing something nice for me.
.90-.65	3.01	3. I like to study and read about things that I am working at.
.70-.96	3.35	4. When I get boared, I like to stir up some excitement.
.58-.29	2.86	5. I can read a long while without tiring my eyes.
.48-.27	2.04	6. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.
.53-.24	2.90	7. It is not hard for me to ask help from my friends even though I cannot return the favor.
.10-.35	3.02	8. I very much like hunting.
.32-.57	2.44	9. Some of my family have habits that bother and annoy me very much.
.63-.31	3.18	10. I have been quite independent and free from family rule.
.68-.37	3.06	11. My relatives are nearly all in sympathy with me.
.68-.47	2.04	12. When I leave home I do not worry about whether the door is locked and the windows closed.
.50-.29	2.05	13. Once in a while I feel hate toward members of my family whom I usually love.

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| .53-.29 | 2.35 | 14. I think that I feel more intensely than most people do. |
| .20-.47 | 2.84 | 15. In school I found it very hard to talk before the class. |
| .43-.22 | 2.15 | 16. I refuse to play some games because I am not much good at them. |
| .18-.55 | 3.95 | 17. I like to keep people guessing what I'm going to do next. |
| .45-.71 | 2.54 | 18. It is alright to get around the law if you don't actually break it. |
| .23-.43 | 2.05 | 19. I feel sympathetic towards people who tend to hang on to their griefs and trouble. |
| .75-.55 | 2.02 | 20. I think Lincoln was greater than Washington. |
| .28-.49 | 2.09 | 21. I am made nervous by certain animals. |
| .65-.37 | 2.75 | 22. I like to read about history. |
| .35-.57 | 2.13 | 23. I dread the thought of an earthquake. |
| .48-.27 | 2.06 | 24. I do not like to see women smoke. |
| .45-.24 | 2.10 | 25. I must often sleep over a matter before I decide what to do. |

21. I am not easily angered. (underachievers answer false)

28. I am often sorry because I am so cross and grouchy.

30. I readily become 100% sold on a good idea.

III. Low achieving men tend more to agree with items which seem to indicate a defensive type of attitude.

23. I have often met people who were supposed to be experts who were no better than I.

31. I have frequently worked under people who seem to have things arranged so that they get the credit for good work but are able to pass off mistakes onto those under them.

- 22. People have often misunderstood my intentions when I was trying to put them right and be helpful.
- 11. Most people make friends because friends are likely to be useful to them.
- 14. I think nearly anyone would like to keep out of trouble (low-achieving men answer false).

IV. Low-achieving men agree with the following items which suggest feelings of insecurity.

- 15. I worry over money and business.
- 20. The future is too uncertain for a person to make serious plans.

V. Low-achieving men tend more often to agree with the following items which suggest possible serious psychological maladjustment.

- 2. I have had very peculiar and strange experiences.
- 24. I deserve severe punishment for my sins.

The remaining six items (4, 7, 25, 27, 32, 33), which the low-achieving men agreed with more often, do not seem to fit into any groupings.

Achieving men in this study, tend more to deny inability to concentrate, lessened efficiency, impulsiveness and irritability, troublesome social behavior, defensiveness, insecurity, etc. They describe themselves as having interests and habits, which together with the relative absence of the signs of tension, diminished efficiency, lack of self-control and reflectiveness, anxiety, etc. which the low achievers answers showed, seem conducive to school achievement. Achievers tended more to agree with the following items:

- 8. I like science.
- 26. I like to attend lectures on serious subjects.
- 3. I sometimes keep at a thing until others lose their patience with me.
- 13. In school I found it very hard to talk before the class (false).

The distribution of grade point averages for the low achieving men reveals that 24 of the 37 low achievers were 1.5 sigma below the mean. An examination of the statements which differentiated this very low achieving group from the high achieving group was made. A difference of 20% was used as the criterion. On the whole, all the items which differentiated the entire group of low achievers from the achieving group, still showed a 20% or greater difference when only the very low men were used in the comparison. In fact, the differences were in almost all cases exaggerated by the omission of the moderately low group. Only three items had a slightly smaller difference.

In addition to the items on the list presented in pages 27-29, the very low achieving men students tended to agree more than the achiever with the following items, which reflect lack of efficiency.

- 41.* I have had periods of days, weeks, or months when I couldn't "get going."
- 163. I do not tire quickly. (non-achievers answer false)
- 409. At times I wear myself out by undertaking too much.

These very low achieving men also express more feelings of sadness, insecurity, and anxiety as suggested by the following items.

- 555. I sometimes feel that I am about to go to pieces.
- 67. I wish I could be as happy as others seem to be.
- 76. Most of the time I feel blue.
- 345. I often feel as if things were not real.



359. Sometimes unimportant thoughts will run through my mind and bother me for days.

411. It makes me feel like a failure when I hear of the success of someone I knew well.

398. I often think, "I wish I were a child again."

All of these items, with the exception of the last, are on Welsh's anxiety scale. Item 41 above is also on this anxiety scale.

The very low achieving men also add these items to the group of what seem to be items related to defensive attitudes, which was indicated on page 31.

136. I commonly wonder what hidden reason another person may have for doing something nice to me.

114. My way of doing things is apt to be misunderstood by others. (also on the anxiety scale used in this study)

WOMEN

Only one item appears on both the women's and the men's scales. This was item: In school I found it very hard to talk before the class.

LOW ACHIEVING WOMEN

I. The low achieving women, as did the low achieving men, see themselves as impulsive, less conventional, as indicated by the following items:

17. I like to keep people guessing what I'm going to do next.

18. It's alright to get around the law if you don't actually break it.

4. When I get bored, I like to stir up some excitement.

There was, however, none of the signs of irritability, temper, etc., as was suggested by the scale items of the low achieving men.

II. None of the items which differentiated the low achieving women from the achieving women were on the anxiety scale. Instead she tended more to agree with the following two items which appear of a phobic nature.

- 21. I am made nervous by certain animals.
- 23. I dread the thought of an earthquake.
- 12. When I leave home I do not worry about whether the door is locked and the windows closed. (low achievers answer false)

III. The low achieving girl seems more masculine in her interests, as suggested by the following items (she scored higher on the Mf scale than the achieving women).

- 8. I very much like hunting.
- 2. I enjoy a race or game better when I bet on it.

IV. The low achieving women students tend to describe themselves as being more involved with their families, less emancipated, than the achieving women.

- 10. I have been quite independent and free from family rule. (false)
- 9. Some of my family have habits that bother me very much. (true)
- 13. Once in a while I feel hate towards members of my family whom I usually love. (false)
- 11. My relatives are nearly all in sympathy with me. (false)

Although more annoyed by family and less free of family rule, the low achieving women feel less accepted by their families, and are less able to accept, or admit, normal ambivalent feelings.

V. The low achieving women seem to have less comfortable interpersonal relations.

7. It is not hard for me to ask help from my friends even though I cannot return the favor. (false)
2. I commonly wonder what hidden reason another person may have for doing something nice for me. (this item also differentiated the very low achieving men from the high achievers)

ACHIEVING WOMEN

I. The achieving women, the same as the achieving men, tend to agree with statements which suggest habits and attitudes which seem directly related to school achievement.

3. I like to study and read about things that I am working at.
5. I can read a long while without tiring my eyes.
22. I like to read about history.
15. In school I found it very hard to talk before the class. (false)

II. She does not describe any traits of impulsiveness but rather tends to be somewhat cautious.

25. I must often sleep over a matter before I decide what to do.

III. The achieving women describe themselves as independent of family rule (item 10) feel accepted by the family (11), can admit of normal ambivalent feelings (item 13) more often, and does not feel so often irritated by them. (false to item 9)

IV. The achieving women seem to have more comfortable interpersonal relationships in some areas, as suggested by her answers to items 7 and 2, which were answered true and false respectively.

V. The achieving women answered false to items 21 and 23, which suggested phobic attitudes for the low achieving women, and true to item 12 which seems closely related.

VI. The achieving women expresses less masculine interests, as suggested by her not liking either gambling or hunting as much as the low achieving woman.

Dividing the low achieving women into very low and moderately low achievers as was done for the men, yielded three more interesting items. The very low achieving woman (1.5 sigma below the mean) answered false to the following two items, which seem to fit in with the picture of the low achieving woman as more phobic in nature.

131. I do not worry about catching diseases. (false)

128. The sight of blood neither frightens nor sickens me. (false)

It also adds this item to the group suggests the low achieving women to be less free and independent from family rule.

327. My mother and father often made me obey when I thought that it was unreasonable.

THE INTELLIGENCE FACTOR

The comparisons between the different groups when intelligence as measured by the A.C.E. score is taken into account are presented in Tables XV - XXII.

Table XV presents the comparisons between low-achieving men with low A.C.E. scores, and low-achieving men with high A.C.E. scores. The trend is for the low-achievers with low A.C.E. scores to have higher mean scores on many of the scales, but only the differences on the anxiety scale and the Pt scale are significant.

Table XVI presents the comparisons between achieving men with low A.C.E. scores and achieving men with high A.C.E. scores. Only one scale, Pa, shows a significant difference, and this may well be due to chance.

Table XVII presents the comparisons between achieving men with low A.C.E. scores, compared to low-achieving men with the same A.C.E. scores. There is considerable difference between these groups. The anxiety scale scores for the low achieving men are significantly higher, at the .02 level. Of the nine clinical scales, four shows a difference significant at the .05 level or better. All differences are in the direction of higher scores for the low achieving men.

Table XVIII presents the comparisons between achieving men with high A.C.E. scores compared to low-achieving men with the same A.C.E. scores. There are no significant differences on any of the nine clinical scales or on the anxiety scale.

Table XIX presents the comparisons between low-achieving women with low A.C.E. scores and low-achieving women with high A.C.E. scores. Significant differences were found on the Ma and repression scales, with the low achievers with high A.C.E. scores, a higher mean Pa score, and a lower repression score.

Table XX presents the comparisons between achieving women with low A.C.E. scores and achieving women with high A.C.E. scores. No significant differences were found.

Table XXI presents the comparisons between low and high achieving women, both with low A.C.E. scores. Only one significant difference (excluding the achievement scale) was found. The low achievers had a higher Mf score. This one difference however, may be due to chance factors.

TABLE XV

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR LOW ACHIEVING MEN STUDENTS WITH A.C.E. SCORES OF 1-4 COMPARED TO LOW ACHIEVING MEN STUDENTS WITH A.C.E. SCORES OF 7-10

Scales	N = 20		N = 11		Difference	t	Level of Significance
	Low Achieving Men With A.C.E. 1-4	Standard Deviation	Low Achieving Men With A.C.E. 7-10	Mean Standard Deviation			
Anxiety	19.10	6.64	13.45	6.01	5.65	2.41	.05
Achievement	13.45	3.09	16.45	4.42	3.00	3.95	.01
Hs	38.80	11.20	36.45	9.76	2.35	.61	-
Hy	55.45	7.57	49.64	10.97	5.81	1.57	-
D	58.35	14.34	50.81	7.52	7.54	1.92	.10 but not .05
Pt	39.85	11.67	31.00	10.02	8.85	2.50	.05
Mf	57.95	9.96	59.73	7.95	1.78	.54	-
Ma	58.55	11.12	58.82	8.12	.27	.11	-
Sc	41.75	14.95	34.00	12.73	7.75	1.53	-
Pa	57.60	10.53	52.91	9.88	4.69	1.23	-
Pd	49.70	10.71	49.18	8.94	.52	.14	-
Repression	13.50	3.37	13.45	4.64	.05	-	-

NOTE: Three men in the low achieving group had A.C.E. scores of five or six, three men had no A.C.E. scores.

TABLE XVI

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND LEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR ACHIEVING MEN STUDENTS WITH A.C.E. SCORES OF 1-4 COMPARED TO ACHIEVING MEN STUDENTS WITH A.C.E. SCORES OF 7-10

Scales	N = 8		N = 26		Difference	t	Level of Significance
	High Achieving Men With A.C.E. 1-4	Mean Standard Deviation	High Achieving Men With A.C.E. 7-10	Mean Standard Deviation			
Anxiety	11.00	5.72	12.88	7.53	.58	.23	-
Achievement	22.00	2.69	24.23	3.12	2.23	1.97	.10 but not .05
Hs	41.25	13.86	34.50	9.18	6.75	1.29	-
Hy	51.75	10.50	55.23	6.77	3.48	.88	-
D	53.50	10.60	57.04	12.46	3.54	.79	-
Pt	27.88	9.23	28.54	14.22	.66	.15	-
Mf	54.38	11.42	63.04	9.94	8.66	1.93	.10 but not .05
Ma	57.50	6.27	52.15	11.57	5.35	1.69	-
Sc	30.50	8.19	32.96	12.88	2.46	.64	-
Pa	46.25	6.14	52.42	8.13	6.17	2.29	.05
Pd	41.88	5.80	44.81	10.85	2.93	.99	-
Repression	14.12	3.33	14.85	3.70	.73	-	-

NOTE: Four men in the achieving group had A.C.E. score of five or six, two men had no A.C.E. scores.

TABLE XVII

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR ACHIEVING MEN WITH A.C.E. SCORES OF 1-4, COMPARED TO LOW ACHIEVING MEN WITH A.C.E. SCORES OF 1-4

Scales	N = 8		N = 20		Difference	t	Level of Significance
	High Achieving Men With A.C.E. 1-4 Mean Standard Deviation	Low Achieving Men With A.C.E. 1-4 Mean Standard Deviation					
Anxiety	11.00	5.72	19.10	6.64	8.10	3.23	.02
Achievement	22.00	2.69	13.45	3.09	8.55	7.31	.001
Hs	41.25	13.86	38.80	11.20	2.45	.63	-
Hy	51.75	10.50	55.45	7.57	3.70	.77	-
D	53.50	10.60	58.35	14.34	4.85	.98	-
Pt	27.88	9.23	39.85	11.67	11.97	2.86	.03
Mf	54.38	11.42	57.95	9.96	3.57	.77	-
Ma	57.50	6.27	53.55	11.12	1.05	.32	-
Sc	30.50	8.19	41.75	14.95	11.25	2.55	.05
Pa	46.25	6.14	57.60	10.53	11.35	3.54	.01
Pd	41.88	5.80	49.70	10.71	7.82	2.47	.05
Repression	14.12	3.33	14.85	3.70	.73	-	-

TABLE XVIII

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR ACHIEVING MEN WITH A.C.E. SCORES OF 7-10 COMPARED TO LOW ACHIEVING MEN WITH A.C.E. SCORES OF 7-10

Scales	N = 26 High Achieving Men With		N = 11 Low Achieving Men With		Difference	t	Level of Significance
	A.C.E. 7-10 Mean	Standard Deviation	A.C.E. 7-10 Mean	Standard Deviation			
Anxiety	12.88	7.53	13.45	6.01	.57	-	
Achievement	24.23	3.12	16.45	4.42	7.78	11.11	.001
Hs	34.50	9.18	36.45	9.76	1.95	.57	-
Hy	55.23	6.77	49.64	10.97	5.59	1.57	-
D	57.04	12.46	50.81	7.52	6.23	1.87	.10
Pt	28.54	14.22	31.00	10.02	2.46	.60	-
Mf	63.04	9.94	59.73	7.95	3.31	1.07	-
Ma	52.15	11.57	58.82	8.12	6.67	2.00	.10
Sc	32.96	12.88	34.00	12.73	1.04	.27	-
Pa	52.42	8.13	52.91	9.88	.49	.14	-
Pd	44.81	10.85	49.18	8.94	4.37	.90	-
Repression	14.85	3.70	13.45	4.64	1.40	-	-

TABLE XIX

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND THE MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR LOW ACHIEVING WOMEN STUDENTS WITH A.C.E. SCORES OF 1-4 COMPARED TO LOW ACHIEVING WOMEN STUDENTS WITH A.C.E. SCORES OF 7-10

Scales	N = 28 Low Achieving Women With A.C.E. 1-4 Mean Standard Deviation		N = 8 Low Achieving Women With A.C.E. 7-10 Mean Standard Deviation		Difference	t	Level of Significance
Anxiety	13.29	7.69	14.25	9.64	.96	-	-
Achievement	9.36	1.86	10.63	2.83	1.27	3.63	.01
Hs	34.29	6.72	35.38	4.64	1.09	-	-
Hy	56.04	7.67	52.25	5.74	3.79	1.52	-
D	51.29	10.04	48.75	12.86	2.54	-	-
Pt	32.32	10.48	36.38	12.97	4.06	-	-
Wf	51.96	5.90	50.00	6.86	1.96	-	-
Ma	48.57	9.80	58.25	4.09	8.68	3.69	.01
Sc	34.00	10.27	38.13	9.75	4.13	-	-
Pa	51.82	6.84	52.63	7.11	.81	-	-
Pd	40.71	9.90	44.63	11.68	3.92	-	-
Repression	16.68	3.41	13.62	3.50	3.06	2.20	.05

NOTE: Eight women in the low achieving group had A.C.E. scores of five or six, five women had no A.C.E. scores.

TABLE XX

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I. FOR ACHIEVING WOMEN STUDENTS WITH A.C.E. SCORES OF 1-4 COMPARED TO ACHIEVING WOMEN STUDENTS WITH A.C.E. SCORES OF 7-10

Scales	N = 7 High Achieving Women With A.C.E. 1-4		N = 23 High Achieving Women With A.C.E. 7-10		Difference	t	Level of Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Anxiety	11.00	8.30	12.70	4.69	1.70	-	-
Achievement	14.71	2.12	16.30	2.63	1.59	1.69	-
Hs	34.86	4.17	33.65	5.83	1.21	-	-
Hy	57.71	9.02	52.39	7.44	5.32	1.42	-
D	50.43	9.72	49.04	8.27	1.39	-	-
Pt	31.57	11.47	31.65	7.72	.08	-	-
Mf	41.43	6.97	46.78	7.85	5.35	1.73	-
Ma	54.71	12.33	49.30	11.79	5.41	-	-
Sc	31.14	8.66	33.87	7.65	2.73	-	-
Pa	56.14	9.83	55.13	7.90	1.01	-	-
Pd	41.86	10.40	34.00	8.11	7.86	1.84	-
Repression	16.14	3.48	15.26	3.76	.88	-	-

NOTE: Eight women in the high achieving group had A.C.E. of five or six; two women had no A.C.E. scores.

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TABLE XXI

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I., AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR ACHIEVING WOMEN WITH A.C.E. SCORES OF 1-4, COMPARED TO LOW ACHIEVING WOMEN WITH A.C.E. SCORES OF 1-4

Scales	N = 7 High Achieving Women With A.C.E. 1-4		N = 28 Low Achieving Women With A.C.E. 1-4		Difference	t	Level of Significance
	Mean	Standard Deviation	Mean	Standard Deviation			
Anxiety	11.00	8.30	13.29	7.69	2.29	-	-
Achievement	14.71	2.12	9.36	1.86	5.35	6.15	.001
Hs	34.86	4.17	34.29	6.72	.57	-	-
Hy	57.71	9.02	56.04	7.67	1.67	-	-
D	50.43	9.72	51.29	10.04	.86	-	-
Pt	31.57	11.47	32.32	10.48	.75	-	-
Mf	41.43	6.97	51.96	5.90	10.53	3.68	.01
Ma	54.71	12.33	49.57	9.80	5.14	1.03	-
Sc	31.14	8.66	34.00	10.27	2.86	-	-
Pa	56.14	9.83	51.82	6.84	4.32	-	-
Pd	41.86	10.40	40.71	9.90	1.15	-	-
Repression	16.14	3.48	16.68	3.41	.54	-	-

TABLE XXII

MEAN T SCORES FOR THE NINE CLINICAL SCALES OF THE M.M.P.I. AND MEAN SCORES FOR THE WELSH ANXIETY SCALE AND THE ACHIEVEMENT SCALE CONSTRUCTED IN THIS STUDY FOR THE M.M.P.I., FOR ACHIEVING WOMEN WITH A.C.E. SCORES OF 7-10 COMPARED TO LOW ACHIEVING WOMEN WITH A.C.E. SCORES OF 7-10

Scales	N = 23		N = 8		Difference	t	Level of Significance
	High Achieving Women With A.C.E. 7-10	Mean Standard Deviation	Low Achieving Women With A.C.E. 7-10	Mean Standard Deviation			
Anxiety	12.70	4.69	14.25	9.64	1.55	-	-
Achievement	16.30	2.63	10.63	2.83	5.67	10.31	.001
Hs	33.65	5.83	35.38	4.64	1.73	-	-
Hy	52.39	7.44	52.25	5.74	.14	-	-
D	49.04	8.27	48.75	12.86	.29	-	-
Pt	31.65	7.72	36.38	12.97	4.73	.98	-
Mf	46.78	7.85	50.00	6.86	3.22	-	-
Ma	49.30	11.79	53.25	4.09	3.95	3.13	.02
Sc	33.87	7.65	38.13	9.75	4.26	1.12	-
Pa	55.13	7.90	52.63	7.11	2.50	-	-
Pd	34.00	8.11	44.63	11.68	10.63	2.38	.05
Repression	15.26	3.76	13.62	3.50	1.64	-	-

Table XXII presents the comparisons between low and high achieving women both with high A.C.E. scores. Two clinical scales, Ma and Pd, show significantly higher scores for the low achieving women

The Validation of the Achievement Scale

The items for men and women were treated as scales and the 4 sub groups, namely men achievers and low achievers, women achievers, and low achievers were scored for these scales. The results are presented in Table XXIII. As would be expected, the differences are highly significant.

In order to control the intelligence factor, the high achieving men (or women), were randomly matched, with individuals in the low achieving group who had the same A.C.E. score. The results of this analysis are presented in Table XXIV. The differences between high and low achievers are still highly significant.

Ideally, the scale should be cross validated by using an entirely new sample. However, this was not possible in this study. Instead, the inventory for those individuals who in grade point average, fell just above the low achieving group and just below the high achieving group, were scored for the achievement scales. These groups will be referred to as the moderately high and low groups. An N of about 30 was taken to be a sufficiently large group to be treated statistically, and still be far enough above or below the mean to be differentiated from the middle group with respect to achievement. These data are presented in Table XV. The difference between the men achievers and low achievers, reaches the .03 level, using the one tail test. The difference between the two groups of women is highly significant even using a two tail test.

In order to control the intelligence variable in the comparison of these moderately low and high groups, they were matched for A.C.E. score in the same way that was done for the high and low achievers. These data are presented in Table XXVI. The difference for men fails to reach the .05 level using the one tail test, while the difference for the women is still highly significant using a two tail test.

The scale for the opposite sex was administered to both the moderately low and moderately high achievers. These data are presented in Table XXVII. The difference between the moderately high and moderately low men on the women's achievement scale is significant at greater than the .05 level. The difference between the moderately high and low women fails to reach the .10 level of significance.

In order to control the intelligence variable in these moderately low and high groups scored on the scale of the opposite sex, they were randomly matched for A.C.E. scores. These data are presented in Table XXVIII. Neither of the differences are significant, even using the one tail test.

The achievement scale correlated .438 with grade point average, for the 290 Men students for whom A.C.E. scores were available. Correlation with A.C.E. scores is .283. The correlation between A.C.E. scores and grade point average is only .191, which is considerably lower than what many other experimenters have reported (1, 2). The multiple coefficient of correlation for the prediction of men's grade point average from both the achievement scale and the A.C.E. scores is .491. The prediction of grade point average depends on achievement scale score to the extent of .417, on A.C.E. score to the extent of .07. The first order partial coefficient of correlation of achievement scale score with grade point average is .455.

TABLE XXIII

THE MEAN ACHIEVEMENT SCALE SCORES FOR THE MEN,
ACHIEVERS AND LOW ACHIEVERS, AND WOMEN, ACHIEVERS AND LOW ACHIEVERS

Group	N	Mean Achievement Scale	Standard Deviation	Differ- ence	t	Level of Signifi- cance
Men Achievers	40	22.78	4.08	8.24	10.43	.001
Men Low Achievers	37	14.54	2.84			
Women Achievers	40	15.95	2.56	6.26	12.04	.001
Women Low Achievers	49	9.69	2.22			

TABLE XXIV

THE MEAN ACHIEVEMENT SCALE SCORES FOR THE MEN,
ACHIEVERS AND LOW ACHIEVERS, AND WOMEN, ACHIEVERS AND LOW ACHIEVERS,
MATCHED FOR A.C.E. SCORES

Group	N	Mean Achievement Scale	Standard Deviation	Difference	t	Level of Signifi- cance
Men Achievers	22	23.23	2.76	7.82	15.04	.001
Men Low Achievers	22	15.41	1.92			
Women Achievers	23	15.61	2.20	5.09	7.71	.001
Women Low Achievers	23	10.52	2.30			

TABLE XXV

THE MEAN ACHIEVEMENT SCALE SCORES FOR THE
MODERATELY LOW AND MODERATELY HIGH ACHIEVERS

Group	N	Mean Achievement Scale	Standard Deviation	Differ- ence	t	Level of Signifi- cance
Mod. High Achievers (Men)	31	19.82	4.19			
				1.84	1.92	.03*
Mod. Low Achievers (Men)	29	17.98	3.22			
Mod. High Achievers (Women)	31	14.10	2.93			
				2.57	4.15	.001
Mod. Low Achievers (Women)	32	11.53	1.81			

* One tail test

TABLE XXVI

THE MEAN ACHIEVEMENT SCALE SCORES FOR THE
MODERATELY LOW AND MODERATELY HIGH ACHIEVERS MATCHED FOR AGE SCORES

Group	N	Mean Achievement Scale	Standard Deviation	Differ- ence	t	Level of Signifi- cance
Mod. High Achievers (Men)	21	20.00	4.24			
				1.90	1.61	.05
Mod. Low Achievers (Men)	21	18.10	3.32			
Mod. High Achievers (Women)	24	14.00	2.89			
				2.71	3.98	.001
Mod. Low Achievers (Women)	24	11.29	1.74			

The achievement scale correlation .50 with grade point average for the 335 women for whom A.C.E. scores were available. Correlation with A.C.E. scores is .364. The correlation between A.C.E. scores and grade point averages is .342 which is considerably higher than the r that was obtained for the men students, and is commensurate with the findings of other experimenters, as reported in the literature (1.2). The multiple coefficient of correlation for the prediction of the women's grade point average from both the achievement scale and the A.C.E. scores is .617. The prediction of grade point average depends on achievement scale score to the extent of .433, on A.C.E. score to the extent of .184. The first order partial r of achievement scale score with grade point average is .466.

A comparison was made of the two scales developed in this study, with those of the investigations reviewed in Chapter I.

Of Clark's 56 items, only six were found to discriminate between achieving and low achieving women in the present study. Three of these were answered in the opposite direction. In agreement with the results of this study were items 5, 17, and 19, in disagreement 12, 14, and 25. Two of the items from Clark's scale were answered in the same direction by the men achievers in this study. These were items 1 and 2.

Of the seven M.M.P.I. items in Owens' scale (31), two were also found to discriminate between the men achievers and low-achievers in this study. These were items three and six.

Comparing Altus' scale of sixty items (2) with the two scales of this study, reveals seven items on the men scale as the same, and four items on the women scale overlapping. These items were 2, 4, 7, 8, 11, 12, 24 for the men, and 5, 8, 11, 18 for the women.

TABLE XXVII

THE MEAN ACHIEVEMENT SCALE SCORES ON THE SCALE FOR THE OPPOSITE SEX,
OF THE MODERATELY LOW AND HIGH ACHIEVERS

Group	N	Mean Achievement Scale Score	Standard Deviation	Differ- ence	t	Level of Signifi- cance
Mod. High Achievers (Men)	31	13.44	2.87			
Mod. Low Achievers (Men)	29	11.90	2.21	1.54	2.33	.05
Mod. High Achievers (Women)	31	20.30	3.87			
Mod. Low Achievers (Women)	32	18.75	3.69	1.55	1.61	.05*

*Using One tail test

TABLE XXVIII

THE MEAN ACHIEVEMENT SCALE SCORES ON THE SCALE FOR THE OPPOSITE SEX,
OF THE MODERATELY LOW AND HIGH ACHIEVERS, MATCHED FOR A.C.E. SCORES

Group	N	Mean Achievement Scale Score	Standard Deviation	Differ- ence	t	Level of Signifi- cance
Mod. High Achievers (Men)	21	13.43	2.61			
Mod. Low Achievers (Men)	21	12.12	2.36	1.33	1.70	.05*
Mod. High Achievers (Women)	24	20.08	3.70			
Mod. Low Achievers (Women)	24	18.50	4.32	1.58	1.33	.05*

*Using One tail test

CHAPTER VI

DISCUSSION OF RESULTS

Let us first examine the data on the different scales. For the entire sample of 367 women and 348 men, the women score higher on Hy, Pa and Repression, the men on Mf, Pd, Ma, and D. The higher scores on the Hy, R, and Pa scales for the women, suggests that within this group of women students, we would expect to find more signs of immaturity, and somewhat suspicious attitudes, without the individuals who so rate themselves, appearing especially neurotic, than we would in the group of men. The higher Hy and Repression scores are in accord with what we frequently observe clinically. The men students significantly higher mean T score on the D scale, suggests that more men than women in this sample tend towards symptomatic depression, and are characterized by a greater tendency to be worrisome and to be lacking in self confidence. The mean Mf score which almost reaches a T of 60, suggest a very decided tendency to more feminine interest patterns on the part of men students. Since intellectual pursuits tend to be more passive in comparison to other activities, this is not at all surprising. While it is true that male homosexuals score high on this scale (2), homosexuality cannot be inferred from a high Mf score, the number of false positives being too numerous. Furthermore, although the Mf scale differentiates between men and women (2), it is not completely clear just what is being measured by this

scale. The higher scores on the Ma and Pd scales for men students in general, suggest that more of the men, than the women, tend to act out conflicts, and are perhaps, somewhat more unconventional. In fact this combination seems opposed to the higher Hy, R combination found for the women. It is not clear at this point, how the decidedly high Mf mean fits into this picture of more of a tendency towards a repressive type personality make up in the women, and a greater tendency to act out conflicts and be somewhat less conventional in the men. This will have to be further investigated. However, it must be stressed, that these are only tendencies in personality make up, since for the most part, scale scores are within normal limits.

This brings us to the question of deviant scale scores. A scale score of 65 or over, was taken to be a deviant score for this college population. We find in this respect, that more men than women students, have profiles with one or more deviant scores. In other words, more men than women students describe themselves as having traits or patterns of behavior which have been found to be associated with maladjustment. The question naturally arises as to whether it might not be simply that men tend more to assume a test taking attitude described by Meehl (23) as plus getting, while women might assume the opposite test taking attitude of defensiveness. In the former case, profiles would be spuriously high because of an overly self critical attitude, while in the latter they would be deceptively low because of any overly defensive attitude. Mean raw K scores do not bear out the

suggestion that men are plus getters. In fact, only one man of all those having deviant profiles had a really low K score of 4. An examination of the profiles of both men and women having no T score which reached 65, reveals that of these, 10.8% of the men, and 11.8% of the women, had a K score of 20 or over, suggestive of a defensive attitude, serving to make their profiles appear more normal than they otherwise would. It is however, a moot question as to just how much higher they would score were it not for this attitude, and since the men and women seem equal with respect to this defensiveness as far as can be determined, it seems reasonable to assume that differences in test taking attitudes is not the explanation for the greater number of deviant profiles for the men.

When we compare the men achievers with the men who do not achieve, the latter seem clearly to be the more poorly adjusted. This is reflected in their higher Sc, Pa, and Pd scores, and their higher manifest anxiety score. In fact their anxiety scale score exceeds the figures cited by Welsh for college men by 8 points, for high school boys by 3 1/2 points. This finding supports hypothesis IV, at least as far as the men students are concerned. There is however, no evidence for the hypothesis (II) that achieving men are any more feminine in their interest patterns than low achieving men. They do have a more feminine interest pattern than the norm group for the M.M.P.I., but no more so than the achieving men, in terms of Mf Score. Although 40% of the achieving men have Mf scores of 65 or over, compared to 21.6%

of the non-achieving men, chi square reaches only the .10 level.

When we compare the women achievers, with the women who do not achieve, the latter show no signs, at least in their scale scores, that they are any more poorly adjusted than the achieving women. However, interestingly enough, the low achieving women have a higher Mf score than the achieving women, suggesting more masculine interest patterns. However, since this was the only significant difference in eleven comparisons it may well be due to chance factors.

When we compare men and women low achievers, the men have higher Mf, Pd, and Ma scores, which was true for the entire sample of men, compared to the entire sample of women. Achieving men tend to have a higher Mf and Pd scale score than achieving women, also true of the original comparison. In so far as we are able then to determine, from an analysis of the clinical scales alone, it would seem that the sex differences, between achievers, and between low achievers, are merely reflections of a general difference between college men and college women, on the M.M.P.I. clinical scales.

Considering again, the question of deviant scale scores, for these subgroups of achievers and low achievers, men and women, we find that : 1) men achievers and non-achievers both show more such deviant profiles than the average men students (men in the middle range of achievement); 2) men achievers and non-achievers taken as a group, have more such deviant profiles than women achievers and non-achievers taken as a group; 3) there are no differences in the number of deviant profiles between any of the three groups of women- high, average, or low.

This suggests that it is not the college men in general who tend to be more maladjusted than the women according to their self ratings on the M.M.P.I., since there seems to be little difference in the number of deviant profiles for the two middle groups, but that it is the high achieving and the low achieving men who show such signs of possible maladjustment. Since the women show no such difference, it may well be related to the greater pressure on men to achieve, and consequent greater signs of maladjustment in individuals who are meeting these demands, and also in individuals who are failing to meet these demands, because they cannot, either for lack of sufficient intelligence, or for psychological reasons. Because of different demands and expectations placed on men and women it may also be that conflicts more readily find expression through achievement or the lack of it in men students.

As was found for the entire sample earlier in this discussion, there is no evidence that these differences in number of deviant profiles are simply reflecting a difference in test taking attitudes.

Considering now the measures of anxiety and repression, we find, as discussed previously, that the low achieving men are significantly more anxious than the achieving men. No such difference obtained for the women. The spread of scores on the repression scale was very much less than on the anxiety scale, and all four sub-groups scored approximately the same on this scale. There is no evidence to support the hypothesis (1V) that low achieving women as a group rely more heavily on repression as a defense.

The frequent clinical observation, that hysteroid type individuals, more frequently women patients, who use repression as a main line of defense, oftentimes show severe curtailment of cultural and educational information and knowledge, gave us to hypothesize that our low achieving women would show higher repression scores than the achieving women. Repression scores are commensurate with Welsh's reported figures.

However, if we consider only those individuals who are high anxious (anxiety scores of 20 or over*) we find a significant difference in the repression scale score between achieving and low achieving men. The mean repression score for the high anxious achievers is commensurate with norm figures cited by Welsh. The mean repression score for the high anxious low achievers is considerably below these norm figures. This lends support to Hypothesis IV, that low achieving men tend to act out their conflicts, to be rebellious against authority, and that this underlies their failure in college. The higher score of the low achieving men on the psychopathic deviate scale is commensurate with this. The anxiety of the high achieving man may be handled through his achievement, and for this group at least, high achieving may be a reflection of their maladjustment. There was no significant difference between the mean repression score for the achieving women, compared with the low achieving women. Interestingly enough though, the trend was in the opposite direction from what was found with the men. The mean repression score of the high anxious women achievers, was considerably below the norm for college women in general. There is nothing to suggest that the high anxious low achieving women rely more on repression as a defense, and that this reliance on repression is non-conducive to achievement. Rather,

the mean repression score for this group seems commensurate with our norm group figures.

Turning now to the item analysis, we find that the low achieving men complain more of inability to concentrate, and inefficiency in their work habits. They tend more to describe themselves as irritable and impulsive, and to describe feelings suggesting a more defensive attitude. They appear more insecure and anxious and agree more to experiencing feelings and ideas which point to possible serious maladjustment. This finding supports Hypothesis IV, for the men students. The above findings are accentuated, when we consider only the very low achievers, and in addition to these findings, the very low achiever describes more feelings of sadness, insecurity and anxiety to a striking degree.

Owens (26) in his study found low achievers to show slight signs of tension and insecurity which he felt to be the result rather than one of the causes of failure. This will now be considered for the very low achieving men, for whom the signs of anxiety, etc., were most pronounced. First of all, it is necessary to determine whether there is any difference in anxiety scale scores between low achievers who took the M.M.P.I. when they first entered Michigan State College and presumably before they could have experienced any failure in their work there, and low achievers who were sophomores when they took the M.M.P.I., and would have had one academic year in which to experience failure. Sixteen of the very low men were freshmen when they took the

M.M.P.I. , eight were sophomores. The means on the anxiety scale were: freshmen 19.30, sophomores 18.10, and the mean of the entire very low group of twenty-four men, 18.54. There were also eleven D scores of T-65 or higher in this group, six in the freshmen group, three in the sophomore group, or 37.5% of each group. This data seems to indicate that the signs of anxiety, depression, etc., in the low achiever, cannot be simply explained away as the result of experiencing failure in college studies. Lastly, eliminating the five "freshmen" who brought transfer credits with them, and presumably could have transferred for reasons of difficulty, or the beginnings of difficulty in their studies, the mean anxiety score of the low achieving men who took the M.M.P.I. in the beginning of their career at Michigan State College, is still 18.15, considerably above the mean for the entire sample.

The achieving men, on the other hand, tend to agree less with items suggesting inefficiency and inability to concentrate, and more with items indicating habits and interests which seem directly related to school achievement. They show less signs of tens on and anxiety in their responses.

The low achieving women also describe themselves as impulsive and less bound by convention than the achieving women, but there are no signs of irritability and temper as described by the men who failed to achieve. The low achieving women shows no signs of greater manifest anxiety, but appears rather phobic, which may be a displacement of anxiety. She tends to express somewhat

masculine interests. In her relationship with her family, as reflected in some of her answers, she seems less independent of her family, while at the same time feeling less accepted by them, and less willing to admit ambivalent feelings about them. There is a suggestion of less comfortable interpersonal relations.

On the other hand, the achieving women, like the achieving men, express more attitudes and claim more habits which seem directly related to school achievement. She describes herself as more independent of her family, less masculine in her interests, less phobic, less impulsive, etc.

The data obtained through the item analysis does not support the first hypothesis set forth in this study, namely that the self ratings characteristic of men achievers will be different from the self ratings characteristic of women achievers. However, the data does definitely indicate important differences between men low achievers when compared to women low achievers.

The hypothesis (III) that women achievers are more likely to be motivated by affiliation needs, while men are more interested in intellectual achievement for its own sake, is neither supported nor refuted by the data. Achievers of both sexes express interests conducive to achievement in school work. The suggestion of less comfortable interpersonal relationships in low achievers of both sexes may point to the presence of needs which conflict with affiliation need in low achievers. The low achievers of both sexes may be motivated rather, by a need to rebel against authority. It is possible that both need achiev-

ement and need affiliation are involved in the motivation to achieve in both men and women, but that affiliation needs take precedence in women. However, either our measuring instrument the M.M.P.I., is not designed to permit a real test of this hypothesis, or the presence of more obvious similarities between achievers of both sexes is masking this more subtle difference.

Considering both scales, it seems as if the difference s between male achievers and low achievers, are more striking than the differences between female achievers and low achievers. Moreover, the items which differentiate the two groups of men students, suggest more maladjustment than is the case with the women. Our fourth hypothesis, namely that low achievers will show more obvious maladjustment is upheld only for the male students, and this maladjustment is especially evident in the higher manifest anxiety score of these low achieving men students. In fact, the men students show a definite tendency for grades to be inversely related to anxiety score, while with the women, excepting the very low anxious, who are also the highest achievers (not statistically significant however) there is no difference in grade point average for the five different levels of anxiety. Graeff's findings (8) with respect to the differences in performance between low anxious men and women (hypothesis V in this study) were not substantiated in this investigation. However, the fact that the high anxious women, are not significantly poorer in performance than the low anxious women, while the high anxious men perform significantly more poorly than the low anxious men, suggests that there is some

important difference in the effects of anxiety on performance in college between men and women students, which would bear further investigation. Whether this is an indication that the effects of anxiety on performance are less for women than men, cannot be determined from the present data. It may be that because of the greater demand for men to achieve in terms of their future roles, conflicts and problems are more likely to be expressed in the area of school performance. Of course it might also be that the women have other defenses and mechanisms which may dilute the effects of their anxiety, or displace its effects onto other areas of functioning.

Significant differences on the achievement scales were also found for the moderately low and high achievers, men and women which were used in lieu of a cross validation sample. These differences continued to be significant even when the groups were matched for A.C.E. scores.

The question naturally arises, whether these two scales are actually specific, with respect to the sex variable, in their ability to predict achievement. In order to test this, the moderately high and low groups were scored for the scale of the opposite sex. The results suggest that the scale for the men is much more specific in its predictive powers than the scale for the women. This may in part be attributable to the high loading of items indicative of insecurity, anxiety, etc., on the scale for the men. The fact that both scales contain a cluster of items which seem directly related to achievement, may account for the

fact that the women's scale differentiates men achievers from low achievers. However, all the differences were considerably less than those obtained using the original achievement scale scores. (Those obtained by scoring with the scale for the same sex.) Moreover, when matches for A.C.E. scores, there were no significant differences.

Thus far, no mention has been made of the intellectual factors involved in achievement. It is obvious that all students are not equally endowed intellectually, and that no conclusions can be drawn about the non-intellective factors involved in achievement without taking actual ability into account.

For the 290 men students for whom A.C.E. scores were available, the correlation of A.C.E. with grade point average was .191; for the 335 women students for whom A.C.E. scores were available, the correlation of A.C.E. with grade point average was .344. Both these figures are low for predictive purposes, being even lower than the figure of .40 or thereabouts which is reported in the literature(4). These correlation values definitely suggest that the A.C.E. score taken alone has little prediction value for later achievement.

Assuming that an A.C.E. score of above average can be taken to indicate ability to do college work, let us examine the M.M.P.I. scale scores for the low achieving men with A.C.E. scores in the 7th percentile or above, compared to the high achievers with the same range of A.C.E. scores. There are no significant differences between these two groups! The low achieving men,

whom we will consider capable of doing at least average work, based on his above average A.C.E. score, shows a trend in the direction of greater hypomanic tendencies. This group does not show the elevated anxiety mean which the low achiever with a correspondingly low A.C.E. score does; they also have a lower Pt scale score, possibly reflecting less tension and less complaints about inability to concentrate which frequently characterize individuals with elevated Pt scores. In fact, the low-low group* show a trend of higher means on six of the nine clinical scales. Interestingly enough, the three scales not showing this trend are *Mf*, *Pd*, and *Ma*. It may be that the tendency to greater hypomania and less conventional attitudes are shared by all low achievers, whereas the symptoms of anxiety, depression, etc., are peculiar to the group of low achievers who also have low A.C.E. scores. It must be stressed however, that we are safer in assuming that students who earn above average A.C.E. scores have at least average ability, than we are in assuming that students with low A.C.E. scores are not sufficiently endowed to do college work, and that therefore the noted anxiety and tension are a result of their being subjected to demands which they are not equipped to meet. Unfortunately, group intelligence tests are not too adequate in distinguishing between individuals who are really not too bright, and individuals who are emotionally too anxious and threatened and depressed to perform well either on an intelligence test, or in their studies.

Let us now consider the high achieving men who scored low on the A.C.E. There were only eight such men, and it seems very

* low grade point average and low A.C.E. score

possible that at least a few of these represent a temporary lapse of efficiency. It is also possible that some of them represent not too bright individuals who by sheer effort and application manage to earn good grades. We see in Table XVII that as a group they are very different from the low achieving men with low A.C.E. scores. This latter group have by comparison higher Anxiety, Pt, Sc, Pa, and Pd scores which seem to reflect a decidedly poorer adjustment.

There is only one significant difference between high achieving men with low A.C.E. scores and those with high A.C.E. scores. This difference is a higher mean scores on the Pa scale for the achievers with a correspondingly high A.C.E. score. However, since this was the only difference which reached the .05 level, it may well be due to chance factors, or it may simply suggest more in the way of what clinicians refer to as over-alertness which is frequently conducive to good test performance. A similar analysis will now be made for the women. Considering first the low achieving women with A.C.E. scores in the 7th percentile or above, compared to the high achieving women with the same range of A.C.E. scores, we find the low achievers showing both a significantly higher Ma score and a higher Pd score. This combination suggests that the group in general tends to be more hypomanic and less conventional. Both of these tendencies seem likely to be in opposition to traits and patterns of behavior which are conducive to achievement in school. We recall here, that comparing these same groups for the men, suggested more hypomanic tendencies on the part of the low achievers who nevertheless had

M.M.P.I., seem less conducive to achievement than the so called feminine interests.

Let us now turn to the achievement scale constructed in this investigation, and consider the effect of intelligence as measured by the A.C.E. on the discriminatory powers of the achievement scale. Matching high and low achievers for A.C.E. scores, we find that the differences in achievement scale score means are still highly significant for both men and women. This is in accord with what we might expect in view of the relatively low correlation of A.C.E. scores with grade point averages, especially for the men. Our multiple coefficients of correlation indicate that the prediction of grade point averages is increased by the use of both A.C.E. scores and achievement scale scores, rather than using one or the other. Ideally, the achievement scale should be cross validated using an entirely new population. However, the results obtained using the next lowest and highest groups are encouraging and suggest that the scale may have some validity with new groups.

A.C.E. scores comparable to the high achievers.

When we consider the differences between low achieving women with higher than average A.C.E. scores, and those with lower than average A.C.E. scores, and compare these differences to what we found for the comparable groups of men, there are some very interesting differences. Unlike the men, the low-low women, do not show the definite signs of maladjustment, when compared to low achieving women with high A.C.E. scores. Rather the low achieving women, whom we could assume could as a group succeed in college in terms of their ability, are more hypomanic, and less repressed, than the low-low group. As for this low-low group of women, the greater tendency to repress may serve to be curtailing adequate performance, as is frequently observed clinically. This repressive trend, if strong enough, would also be expected to depress performance on the A.C.E. for some of the individuals. Of course, some portion of these students are probably simply not bright, but with the data available, it is not possible to determine which these are. However, for the low achieving women who have given some evidence that they are of adequate intelligence, part of the failure to achieve may be related to their more action oriented, or perhaps acting out tendencies as a group, which seems less conducive to academic achievement.

Finally in comparing the low achieving women with the low A.C.E. scores to the high achieving women with A.C.E. scores in the same range, the former group are more masculine in their interest patterns. This finding reinforces a previous impression in the study, that masculine interests as identified by the Mf scale of the

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study sought primarily to distinguish between the non-intellectual factors associated with achievement in men compared to women. The M.M.P.I's of forty achieving and thirty-seven low achieving men, and forty achieving and forty-nine low achieving women, separated from an original random sample of 348 men and 367 women, were used in this study. The inventories had been administered by the college counseling center to students enrolled in Effective Living in the Fall of 1948. An analysis of performance on the nine clinical scales, and an anxiety and repression scale was made, for these four groups. Two achievement scales, one for men and one for women were constructed. Most outstanding was the finding that men who were low achievers in college tended more to claim feelings of tension, anxiety, depression and insecurity than did men who achieved in college. No such difference obtained for the women in this study. This difference in expressed feelings of tension, etc., between men achievers and low achievers does not seem to be simply the result of experiencing failure, and may in part be a factor in causing failure. Anxiety was more clearly related to performance for the men students than for the women students. Both low anxious men and women achieve the highest grades. However, none of the differences between the means for grade point average for the five different degrees of anxiety were significant for the women students,

while the low and the intermediate low anxious men were significantly superior to the high anxious men in grade point average. It was suggested that the different roles, and consequently different social demands and expectations for men, as compared with women, may be conducive to more of a tendency for problems and conflicts to be expressed in the area of school achievement. It was also suggested that women low achievers may handle their conflicts in a different manner. Their tendency to express more phobic ideas and to be less independent rather than to express conscious conflict and insecurity suggests some important personality differences which would bear further investigation.

Low achievers of both sexes were found to be significantly more hypomanic and less conventional than achievers. This was especially true of low achievers who had scored above average on the A.C.E. Low achieving men who scored above average on the A.C.E. did not show the signs of insecurity and tension that was characteristic of the low achievers with low A.C.E. scores. However, since these signs of maladjustment were as pronounced in men low achievers who were freshmen, directly from High School, at the time they took the M.M.P.I., as they were in men who had been at Michigan State a year before taking the M.M.P.I., it seemed reasonable to assume that their poor performance was in some part the effect of anxiety. This suggests that men may utilize school performance as a channel for the expression of conflicts as well as the fact that their performance in school tends more to be disrupted by anxiety.

More of the men students in both the achieving and low achieving groups show signs of maladjustment as reflected in elevated scores on the clinical scales, than do the men in the middle range of grade point averages. These two groups also show more such signs than do the corresponding groups of women students. There seems to be no difference in this respect between the average achievers- men or women. The greater pressures on men to achieve was offered as one possible explanation.

Both men and women achievers claim more efficient work habits, and attitudes more conducive to achievement in college.

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APPENDIX

TABLE XXIX

THE WELSH ANXIETY SCALE

1. 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. 443 T*
2. I have several times had a change of heart about my life work. 465 T
3. I have often lost out on things because I couldn't make up my mind soon enough. 147 T
4. When in a group of people I have trouble thinking of the right things to talk about. 267 T.
5. I do many things which I regret afterwards. 94 T
6. People often disappoint me. 383 T
7. I am easily embarrassed. 321 T.
8. I have a daydream life about which I do not tell other people. 511 T
9. I feel unable to tell anyone all about myself. 384 T
10. Criticism or scolding hurts me terribly. 138 T
11. Even when I am with people I feel lonely much of the time. 305 T
12. I wish I could be as happy as others seem to be. 67 T
13. I have difficulty in starting to do things. 259 T
14. At periods my mind seems to work more slowly than usual. 374 T
15. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going". 41 T
16. I brood a great deal. 236 T
17. Often, even though everything is going fine for me I feel that I don't care about anything. 396 T
18. I very seldom have spells of the blues. 379 F

* number in the M.M.P.I. booklet and direction of answer for this scale

19. Most of the time I feel blue. 76 T
20. I am apt to take disappointments so keenly that I can't put them out of my mind. 414 T
21. I feel anxiety about something or someone almost all the time. 337 T
22. I have often felt guilty because I have pretended to feel more sorry about something than I really was. 518 T
23. I usually have to stop and think before I act even in trifling matters. 343 T
24. Sometimes some unimportant thought will run through my mind for days. 359 T.
25. Often I cross the street in order not to meet someone I see. 344 T
26. I often feel as if things were not real. 345 T
27. I have often felt that strangers were looking at me critically. 278 T
28. I must admit that I have at times been worried beyond reason over something that really did not matter. 499 T
29. My plans have frequently seemed so full of difficulties that I have had to give them up. 389 T
30. I wish I could get over worrying about things I have said that may have injured other people's feelings. 382 T
31. I have more trouble concentrating than others seem to have. 356 T
32. I find it hard to keep my mind on a task or job. 32 T
33. It makes me feel like a failure when I hear of the success of someone I know well. 411 T
34. I have sometimes felt that difficulties were piling up so high that I could not overcome them. 397 T
35. Life is a strain for me much of the time. 301 T
36. At times I think I am no good at all. 418 T
37. I worry quite a bit over possible misfortunes. 431 T
38. I sometimes feel that I am about to go to pieces. 555 T
39. I feel tired a good deal of the time. 544 T

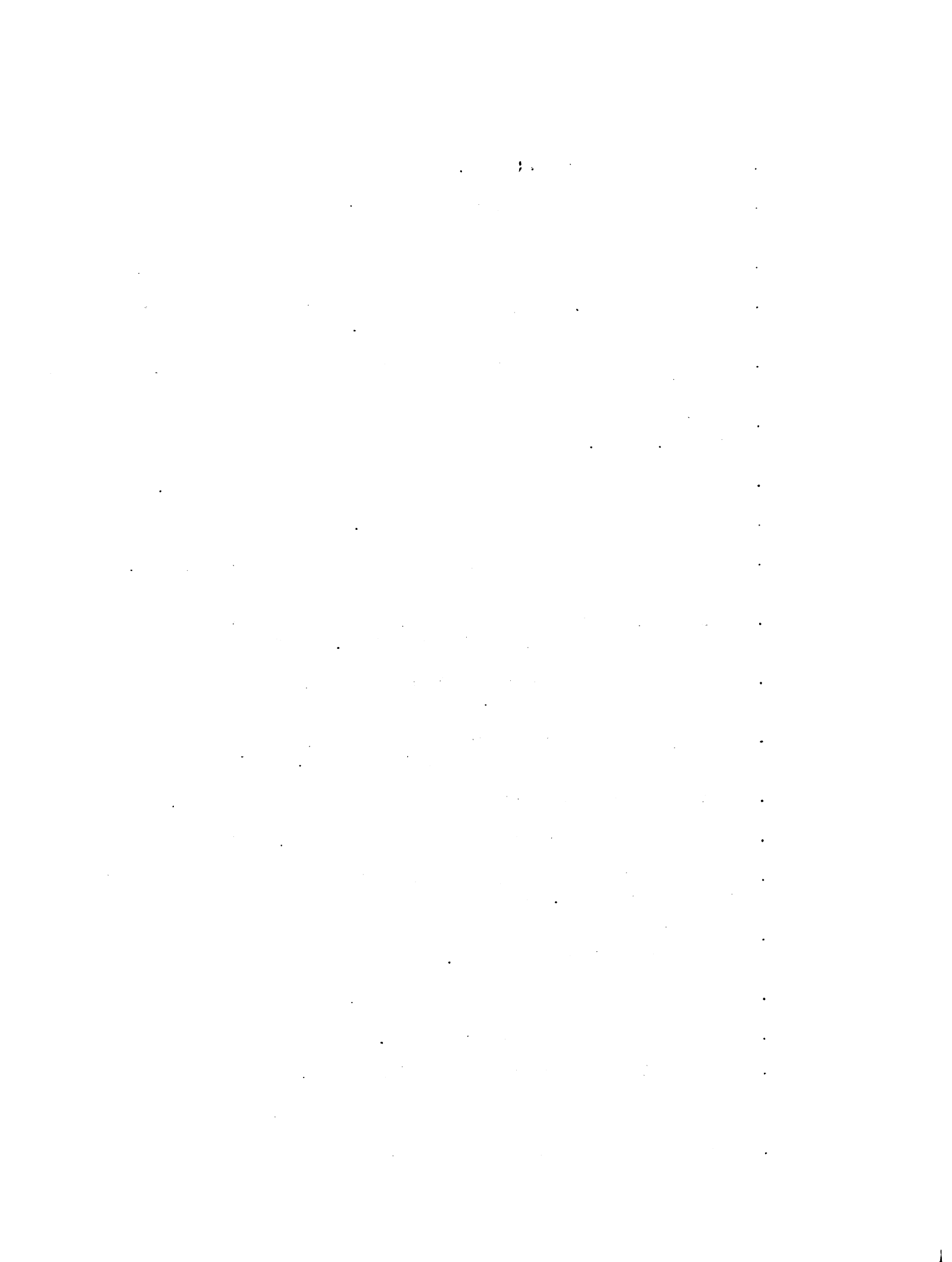


TABLE XXX

THE WELSH REPRESSION SCALE

1. I am in just as good physical health as most of my friends. 51 F*
2. I have never had a fit or convulsion. 154 F
3. I have had periods in which I carried on activities without knowing later what I had been doing. 156 F
4. I do not often notice my ears ringing or buzzing. 281 F
5. Sometimes when embarrassed, I break out in a sweat which annoys me greatly. 191 F
6. I have had no difficulty starting or holding my urine. 462 F
7. My mother or father often made me obey even when I thought that it was unreasonable. 327 F
8. Some of my family have quick tempers. 516 F
9. Once in awhile I feel hate towards members of my family whom I usually love. 282 F
10. I am about as able to work as I ever was. 9 F
11. I like to attend lectures on serious subjects. 429 F
12. I like to read newspaper articles on crime. 6 F
13. I enjoy detective or mystery stories. 12F
14. I like to flirt 208 F
15. I was fond of excitement when I was young. 445 F
16. I frequently find it necessary to stand up for what I think is right. 112 F
17. I am often inclined to go out of my way to win a point with someone who has opposed me. 447 F
18. I do not blame a person for taking advantage of someone who lays himself open to it. 271 F
19. I enjoy social gatherings just to be with people. 449 F
20. I enjoy the excitement of a crowd. 450 F
21. My worries seem to disappear when I get into a crowd of lively friends. 451 F

22. I try to remember good stories to pass them on to other people. 440 F
23. I like to let people know where I stand on things. 502 F
24. I am often sorry because I am so cross and gouchy. 468 F
25. At times I am all full of energy. 272 F
26. At times I feel like smashing things. 39 F
27. At times I feel like picking a fist fight with someone. 145 F
28. I am fascinated by fire. 472 F
29. I do not worry about catching diseases. 131 F
30. I have often met people who were supposed to be experts who were no better than I. 406 F
31. If given the chance I would make a good leader of people. 415 F
32. I like repairing a door latch. 550 F
33. I think I would like the kind of work a forest ranger does. 81 F
34. I like science. 221 F
35. I like mechanics magazines. 1 F
36. I think I would like the work of a building contractor. 219 F
37. I like to cook. 140 F
38. I am very careful about my manner of dress. 556 F
39. I like dramatics. 126 F
40. I would like to wear expensive clothes. 529 F

TABLE XXXI

MEANS AND SIGMAS FOR WELSH ANXIETY AND REPRESSION SCALES

POPULATION	N	MEAN		MEAN	
		A	R	A	R
1. VA Mental Hygiene Clinic I	100	20.4	16.0	10.6	5.6
2. VA Mental Hygiene Clinic II	105	19.8	17.1	10.3	4.5
3. Naval Hospital	101	17.1	16.5	15.0	5.6
4. High School Girls I	131	16.3	16.2	8.9	4.1
5. High School Girls II	98	15.4	17.1	8.4	3.7
6. VA GM and S Hosp. I	150	15.3	16.9	10.8	5.8
7. High School Boys I	151	13.7	14.1	8.0	4.5
8. High School Boys II	123	13.3	16.4	7.3	4.7
9. VA GM and S Hosp. II	52	12.3	17.4	8.2	4.9
10. Hospitalized chron. alcoholics	64	12.0	12.0	8.8	5.2
11. Grad. School Men	40	11.5	16.5	7.3	3.6
12. College Undergraduates	425	10.1	15.5	8.0	3.9
13. College Women	96	9.7	17.4	6.9	3.5
14. College Men	132	8.7	15.2	7.7	4.7
15. Air Force Officers	153	6.0	14.6	7.1	4.1

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