"Over-achievement" and "under-achievement" of college students in relation to their psychological needs for achievement and affiliation

Eugene Beauharnais Van Artsdale
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"OVER-ACHIEVEMENT" AND "UNDER-ACHIEVEMENT" OF COLLEGE STUDENTS IN RELATION TO THEIR PSYCHOLOGICAL NEEDS FOR ACHIEVEMENT AND AFFILIATION

by

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B. S. Montana State College, 1950

Presented in partial fulfillment of the requirements for the degree of Master of Arts

MONTANA STATE UNIVERSITY
1956

Approved by:

[Signatures]
Chairman, Board of Examiners
Dean, Graduate School

3/23/56
Date
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CHAPTER I

THE PROBLEM

Many factors have been shown to have either positive or negative effects upon academic achievement. Among these factors, the strength of specified psychological needs has been postulated as a pertinent variable. If it were possible to identify a relationship between these needs and scholastic achievement, we would acquire a method for making better predictions of scholastic achievement. Applezweig and Applezweig have delineated four broad "universal" needs or motives in our culture and have designated them as follows:

1. Escape from present pain or fear
2. Avoidance from future pain or discomfort
3. Social approval or belongingness
4. Self-realization or creativity

Staker, in discussing factors related to academic over-achievement and under-achievement, states:

There are students who do not achieve the grades predicted for them, and others who exceed expectations. The reason for the over and under achievement may be the student's personality, motivation, living conditions, study habits, etc. Therefore, one of the main problems of prediction is to try to determine the factors involved that cause certain students to be classified as over.

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and under achievers with respect to their predicted success.²

Two of these factors may be two of the "needs" cited by Applezweig³: (1) social approval or belongingness which shall be referred to in the present context as the need for affiliation (N_{aff}) and (2) self-realization or creativity which shall be categorized as the need for achievement (N_{ach}). This classification is consistent with McClelland's⁴; and follows specifically the two major categories of need delineated by Pepinsky, Hemphill and Shevitz.⁵

McClelland has cited Mowrer as stating that all the basic needs are types of discomfort and are in the broad sense "painful." Mowrer believes that human beings are capable of being motivated not only by organic needs (discomforts) that are immediately present and felt, but also

³Applezweig, op. cit.
⁶McClelland, op. cit., p. 9.
by the mere anticipation of such needs. This leads us to believe that the presence of a need in an individual is discomforting, and that the individual will take action to ameliorate this discomfort. The direction of action taken will be determined by a motive. McClelland quotes Hebb as indicating the motive as a director of activities. These motives are learned and may differ from individual to individual. Much research has been denoted to the needs and motives of the individual. Cited here are only those studies relevant to the present investigation.

McClelland found a resistance to conformity in subjects with a high "need achievement." Asch adds:

In short, subjects with high need achievement not only say that lack of courage is the 'vice' over which they feel the more guilty; they practice what they preach and actually more often show courageous independence when under social pressure to conform. They are independent in action as well as thought; their independence appears almost to be a consistent 'way of life' which either originates or is reflected in their relationship to their parents.

Concerning "need affiliation" Strang says:

Social reasons also account for gifted children's poor school performance or even failure in some subjects. Like other children and adolescents, they seek status in their group. If the morale of the group is low and

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7Ibid., p. 8.
8Ibid., p. 8
academic achievement is disparaged, then the gifted child sometimes does poor work, just to be accepted by the group.\textsuperscript{10}

The hypothesis to be tested in the present study is derived from concepts given special definition by Pepinsky, Hemphill and Shevitz.\textsuperscript{11} They have found that individuals who possess different strengths of need affiliation (N\text{aff}) and need achievement (N\text{ach}) react differently in respect to taking leadership roles. They sought to determine to what extent attempted leadership acts are a function of particular inferred needs: (a) need achievement (status, recognition) and (b) need affiliation (love and affection).\textsuperscript{12} In order to measure these inferred "needs," they constructed a screening questionnaire (Appendix A) and an interview schedule (Appendix B) designed to estimate the strength of N\text{ach} and N\text{aff} in their subjects.

This leadership study has provided the impetus for the present investigation. In brief, the purpose is to test a hypothesis which pertains to the relationship between: (a) the relative strength of need affiliation (N\text{aff}) and need achievement (N\text{ach}) in college students and their (b) "over-achievement" and "under-achievement" in respect to academic grades.


\textsuperscript{11}Pepinsky, Hemphill and Shevitz, \textit{op. cit.}, p. 5-6.

\textsuperscript{12}\textit{Ibid.}, p. 1.
The achievement of college students as measured by grade point averages is not always compatible with expectations predicated upon their scholastic aptitude scores. The grades of some students are higher than would be anticipated; those of others, lower. These two groups of students may be referred to respectively as "over-achievers" and "under-achievers." Other than "intellectual" factors are involved in these differentiations; and for purposes of guiding students and of predicting their scholastic success, it is important to identify these factors. The purpose of the present study is to test the hypothesis that the relative strength of a student's $N_{ach}$ and $N_{aff}$ is associated with the discrepancy between his actual grade point achievement and that achievement predicted on the basis of his scholastic aptitude score.

It is appropriate at this point to define the terms used in this study. First, those concepts which pertain to the independent variables shall be defined; and second, those that constitute the dependent variables. The design of the study indicates "needs" as the independent variable.

**Need Achievement.** ($N_{ach}$) An individual is described as possessing high need achievement if he consistently attempts to experience success in competition with one or more standards of excellence.

**Need Affiliation.** ($N_{aff}$) An individual is described
as possessing high need affiliation if he consistently attempts to establish, maintain or recover friendly, warm or loving relationship with other persons.

The definitions of the two "needs" are an integral part of the study by Pepinsky, Hemphill and Shevitz, and are used in the present study as variables purportedly measured by the screening questionnaire and interviewing schedule. These instruments permit the identification of four Classes of relationship.

(1) Class I - high N<sub>ach</sub>, low N<sub>aff</sub>
(2) Class II - low N<sub>ach</sub>, high N<sub>aff</sub>
(3) Class III - high N<sub>ach</sub>, high N<sub>aff</sub>
(4) Class IV - low N<sub>ach</sub>, low N<sub>aff</sub>

Our concern will be confined to a comparison between the students in Class I and Class II.

Having examined the independent variable, let us now inspect the dependent variable, over-achiever versus under-achiever.

A student who has a higher Grade Point Average (G.P.A.) than predicted on the basis of his total score on the American Council on Education Psychological Examination for College Freshmen (A.C.E.) is an over-achiever.

A student who has a lower Grade Point Average (G.P.A.) than predicted on the basis of his total score on the American Council on Education Psychological Examination for College Freshmen (A.C.E.) is an under-achiever.

The American Council on Education Psychological Examination for College Freshmen is a well-standardized, widely used test of "intelligence." As Commins comments, "This is perhaps the test that one is most likely to recommend for a 'good' intelligence test to a group of college freshmen."¹⁴

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CHAPTER II
PROCEDURE

The sample of subjects was composed of those students enrolled in the 1956 Winter Quarter class of Education 20 at Montana State University for whom A.C.E. total scores were available and who had been students at this University for at least one previous quarter. Eighty-one students were given the screening questionnaire described by Peplinsky, Hemphill and Shevitz. The questionnaire was scored according to the directions given by these investigators, and a score was computed for the $N_{ach}$ and the $N_{aff}$ of each subject (Appendix A). These scores were plotted on a scattergram with the vertical axis indicating $N_{aff}$; and the horizontal axis, $N_{ach}$. The mean for the $N_{aff}$ scores and the mean for the $N_{ach}$ scores were used to define four quadrants:

1. Class I - high $N_{ach}$ low $N_{aff}$
2. Class II - low $N_{ach}$ high $N_{aff}$
3. Class III - high $N_{ach}$ high $N_{aff}$
4. Class IV - low $N_{ach}$ low $N_{aff}$


2Need Achievement
3Need Affiliation
SCREENING QUESTIONNAIRE

Direction: If your answer is "yes" mark 4
If your answer is "no" mark -
Mark as indicated in the question

1. What grade point average do you hope to achieve? _____
2. Do you feel that it is all right to turn down friends who want favors, even if they act annoyed about being turned down? _____
3. Do you hope to become one of the top men in your chosen profession? _____
4. Do you feel it is worth your effort to earn straight A's even if you have a hard time doing it? _____
5. Do you like instructors who always call you by your first name? _____
6. Is your main reason for joining an organization that you like the other members? _____
7. Do you join in new activities in order to meet a lot of interesting people? _____
8. Do you sometimes get homesick for your family and old buddies? _____
9. Do you feel that you must do everything as close to perfect as you can? _____
10. Would you, on some occasions, rather go to a movie by yourself than go on a double date? _____
11. How many hours do you plan to take each quarter? _____
12. Are you planning to go to summer school in order to get through college more rapidly? _____
13. Do you find that you get along better if you do not get too involved with the people around you? _____
14. If you knew you would get more out of the course, would you be willing to read a 50-page assignment every day? _____
15. Is it very upsetting to you if any unfriendly remarks are exchanged with your friends?  ____
The present study deals exclusively with the subjects in Class I and Class II. To confirm the classification of students in respect to the strength of their $N_{ach}$ and $N_{aff}$ as estimated by the questionnaire findings, the students in the two Classes were then interviewed according to the schedule described by Pepinsky, Hemphill and Shevitz. The structured interview and rating sheet are described in Appendix B. The interviewing procedure has been summarized as follows:

Our potential subjects were interviewed individually by one of two interviewers. The interview schedule was used and each interview averaged about fifteen minutes in length. The interviews were conducted without the interviewer's knowledge of the individuals scores on the screening questionnaire beyond the fact that his scores were extreme enough to qualify him as a potential subject in one of the two classes.

The interview involved as thorough an inquiry into the individuals attitudes, feelings, and personal history as the available time allowed. The specific questions asked were focused upon areas of activity and interest (vocational, academic, social) that presumably would elicit some indication of the consistency with which, in

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4. Aukerman, a graduate student at Montana State University, is conducting a parallel study of these students in Class III and Class IV.

5. Ibid., pp. 69-70.

6. Aukerman and the writer first used eight graduate students as practice interviewees in order to be assured that the independent ratings by each interviewer were in sufficient agreement to permit us to interview "live" subjects independently and secure comparable ratings. The two interviewers established a stable frame of reference against which ratings of the interviewees were made.
various situations and over an extended time period, an individual had engaged in behavior relevant to $N_{ach}$ or $N_{aff}$. Immediately after the interview, the interviewer rated each "candidate" on the two needs on separate nine point scales. For any individual to be eligible as a subject, it was stipulated (a) that there should be a discrepancy of at least two scale intervals between his ratings on the two needs, and (b) that the lower of the two ratings should not exceed the fifth point on the scale. On individuals whose ratings met these criteria was placed in Class I, if the higher of his two ratings was on $N_{ach}$ and in Class II, if his higher ratings was on $N_{aff}$.7

Because they did not meet stipulation (a) two subjects were eliminated.

On the basis of the questionnaire and the interview two groups of students were identified; twenty-three students with high $N_{ach}$ and low $N_{aff}$ were in Class I, and nineteen students with low $N_{ach}$ and high $N_{aff}$ were in Class II. For the students in each of these two groups the A.C.E. total score and the G.P.A. were tabulated. These scores then were converted into standard scores derived from mean and standard deviation of the combined samples.

Nine of the students had not taken the A.C.E. test and two had taken the 1947 form, the scores of which could not be readily converted to equivalent scores on the 1952 form which had been taken by the majority of the subjects. With the consent of the Counseling Service, arrangements were made to have these nine students take the A.C.E. test, but only six

7Ibid., pp. 16-17.
of them appeared. A few students had taken the 1949 form; and their scores were equated on the 1952 form.

The Registrar's Office cooperated in making available the G.P.A.s of the students. Due to drop-outs, insufficient records and interview screening the number of cases was reduced by ten to seventy-one. The means of the Nach and Naff scores were computed on the original sample of eighty-one. Twenty-three students scored in Class I; and nineteen scored in Class II.

A discrepancy score was computed by taking the algebraic difference between each A.C.E. standard score and the G.P.A. standard score. To clear the figures of negative numbers a constant of five was added to each computed value. According to this method all "over-achievers" scored above five; all "under-achievers" below five. These discrepancy scores were tabulated separately for the subjects in Class I and in Class II; and the mean, standard deviation, and variance of each sample were computed.

The hypothesis tested stated in null form was that no significant difference existed between the means of these

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8 Thanks are due to Dr. Thomas C. Burgess and Mrs. Thelma L. Ware of the Montana State University Counseling Service for their cordial cooperation.

9 Thanks are due to Mr. Leo Smith, Registrar at Montana State University for his cordial cooperation.
two samples. To test this hypothesis, the t-ratio\textsuperscript{10} was applied. The unpooled variance formula was used because the F test of heterogeneity of variance had indicated an F of 2.84, significant at the .05 level of confidence.\textsuperscript{11}


\textsuperscript{11} \textit{Ibid.}, pp. 253-254.
CHAPTER III

FINDINGS

The relationship between the estimated strength of the two independent variables, $N_{ach}$ and $N_{aff}$, is shown in Figure 1. The $N_{ach}$ and $N_{aff}$ scores received on the screening questionnaire and interviewing schedule for the subjects in Class I and Class II are given in Table I and Table II. The standard A.C.E. scores, standard G.P.A. scores and the discrepancy scores for each Class are also tabulated in Table I and II.

The t-ratio yielded a value of .40, with 2.04 required for significance at the .05 level of confidence. Accordingly, there was insufficient evidence to reject the null hypothesis; and hence it was concluded that in respect to discrepancy scores, the students in Class I and Class II have been drawn from the same parent populations. T-ratios also were computed for the difference between the means of the A.C.E. standard scores of students in Class I and Class II; and for the difference between the means of the G.P.A. standard scores of students in Class I and Class II. The t-ratio

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1 A product-moment correlation was calculated for the relationship between $N_{ach}$ and $N_{aff}$. The results were $r=.01$. The lack of significant relationship between these two needs indicates these variables are independent of each other.

-15-
between the means of G.P.A. standard scores was .405 between the means of A.C.E. standard scores, .907. Both ratios failed of significance at the .05 level of confidence.
FIGURE 1

SCATTERGRAM OF SCORES ON NEED ACHIEVEMENT AND NEED AFFILIATION

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Table I

Need Achievement and Need Affiliation Scores; Standard and Discrepancy Scores for A.C.E. and G.P.A. for Subjects in Class I

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<tr>
<th>Subject</th>
<th>Questionnaire</th>
<th>Interview</th>
<th>Standard Score</th>
<th>Standard Score</th>
<th>Discrepancy Score</th>
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<tr>
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<td>8 5</td>
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TABLE II

NEED ACHIEVEMENT AND NEED AFFILIATION SCORES;
STANDARD AND DISCREPANCY SCORES FOR A.C.E.
AND G.P.A. FOR SUBJECTS IN CLASS II

<table>
<thead>
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<td>.32</td>
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CHAPTER IV

DISCUSSION AND SUMMARY

This study was designed to investigate the relationship between over and under-achievement of college students and the patterning of their needs for achievement and affiliation. It was predicated upon the hypothesis that the relative strength of a student's need achievement and need affiliation is pertinent to whatever discrepancy exists between his actual grade point achievement and that achievement which would be predicted on the basis of his scholastic aptitude score. Two groups of students were classified in respect to the strength of their needs: Class I, high $N_{ach}$ and low $N_{aff}$; and Class II, low $N_{ach}$ and high $N_{aff}$. It was postulated that the subjects in Class I would tend to be "over-achievers" whereas those in Class II would be characterized as "under-achievers." This hypothesis was tested in null form. It was found that only a chance difference existed between the means of the "over-achievers" and "under-achievers" on their discrepancy scores. Those students who indicate a strong drive to achieve, as measured by the instruments used in this study, apparently do not reflect this drive in their scholastic grades in this University.

The present data unfortunately do not provide clear clues in respect to why a significant difference was
not found between the discrepancy scores of the two samples of students. A few speculations of possible worth to future investigators, however, may be offered. First, it is possible that the instruments used to classify students into the two groups were too coarse for the present purposes. Second, it is probable that the variance from sources other than those studied in this instance may have had an over-riding effect upon the discrepancy scores of the students. For example, the standards of small groups of students at the University-friendship groups and fraternity and sorority groups may be coercive in determining a student's level of aspiration and achievement in college grades. Third, it is possible that by confining the investigation to the two needs studied, other needs more pertinent to academic over or under-achievement may have been overlooked. Fourth, and not least important, is the possibility that academic grades may not be a sufficiently reliable index of academic achievement. The Grade Point Average pools grades from all sources, but it is patent that an A from one instructor, or in one course, can mean less achievement-wise than a C from another instructor, or in a more difficult course. Nor have these students all taken the same courses. It is likely that the weaker students tend to choose--when they can--easier courses; whereas strong achievers aspire higher and tackle more difficult programs.

Despite the negative findings of the present
study, the writer believes that this problem of the relationship between the patterning of individual needs and over and under-achievement in academic college grades deserves further investigation.
BIBLIOGRAPHY
A. BOOKS


B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES, AND OTHER ORGANIZATIONS


C. UNPUBLISHED MATERIALS


APPENDIX A

SCREENING QUESTIONNAIRE AND SCORING UTILITY
Directions: Check the correct answer or mark as indicated in the question.

Scoring Key

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1. What grade point average do you hope to achieve?
   -1 for 3.0 (B) or better

2. Do you feel that it is all right to turn down friends who want favors, even if they act annoyed about being turned down?
   Yes [ ] No [ ]

3. Do you hope to become one of the top men in your chosen profession?
   Yes [ ] No [ ]

4. Do you feel it is worth your effort to earn straight A's, even if you have a hard time doing it?
   Yes [ ] No [ ]

5. Do you like instructors who always call you by your first name?
   Yes [ ] No [ ]

6. Is your main reason for joining an organization that you like the other members?
   Yes [ ] No [ ]

7. Do you join in new activities in order to meet a lot of interesting people?
   Yes [ ] No [ ]

8. Do you sometimes get homesick for your family and old buddies?
   Yes [ ] No [ ]

9. Do you feel that you must do everything as close to perfect as you can?
   Yes [ ] No [ ]

10. Would you, on some occasions, rather go to a movie by yourself than go on a double date?
    Yes [ ] No [ ]

11. How many hours do you plan to take each quarter?
    -1 for 16 or more

12. Are you planning to go to summer school in order to get through college more rapidly?
    Yes [ ] No [ ]
APPENDIX B

INTERVIEW SCHEDULE AND INTERVIEW RATING FORM

-27-
The interviewer calls in the subject, asks him to be seated, and opens the interview as follows:

"__________", for the purposes of this experiment, we are interested in selecting the best qualified subjects to work together on a group task. And so I'd just like to talk with you briefly about your attitudes and opinions on a few subjects, how you feel about the courses you're taking, school in general, etc. Of course, anything discussed here is confidential, but if you feel that any questions are too personal, just say so, and I won't press the matter. Why don't you start by telling me how you happened to come to college?"

From this point on, the interviewer should be sensitive to the subject's lead in ordering the interview, but structure it sufficiently to include inquiry into the following areas—to the extent permitted by a 15-20 minute time limit:

1. Whether working to pay his way—whether on scholarship
2. Parental attitudes toward his coming to school—how he'd feel if parents had different attitude
3. Major course—how he happened to choose and what plans are for future—salary aspirations
4. Kind of student he was in high school—grade expectations for college—explanation of any discrepancy—his and parents' attitudes toward grades
5. Attitudes toward taking examinations, study load, time spent in studying
6. Membership in honoraries and attitudes toward these and other extra-curricular activities—values and importance of extra-curricular activities

"Then there's the question of social fraternities, have you, or do you plan to join one?"

1. Reasons for decision
2. Attitudes toward those who have made different decision
3. Importance of social fraternities at M.S.U.—how necessary to having a good time

"How do you feel about the general importance of social life in college?"

1. Whether has joined any social groups (other than fraternities)—reasons
2. Amount of time spent in social activities
3. (If not married) frequency of dates
4. Attitudes toward "going steady"—advantages and disadvantages—whether is now or ever has gone steady
5. Attitudes toward double-dating
6. What kind of girl he likes
7. Interference of dating with scholastic work

By the end of the interview, the interviewer must reach decisions about whether the subject is qualified for participation in the experiment and to which need class he belongs (Class No. 1=high Nach low Naff; Class No. 2=high Naff low Nach).
INTERVIEW RATING FORM

Affiliation

Constantly seeks to establish and maintain close friendships of those around him. Consistently strives to secure affection from others as an end in itself. Consistently expresses liking for people or desire to help them as basis for action. No evidence of Machiavellian intent in interpersonal relations.

Has many friends with whom he seeks to maintain warm relationships. Frequently engages in social activities, and does not like to be alone.

Enjoys friendly companionship for the sake of companionship, but is not threatened when he finds it necessary to be alone. Would like to be friendly, and join in group activities that are readily available.

Has some friends but would rather not become too involved with them. Passively accepts rather than actively seeks relationships with others.

Feels self sufficient—has detached impersonal attitude toward others. Avoids close interpersonal relations. Views people as objects to be manipulated.

Achievement

Wants highest level of success in whatever he undertakes and is willing to work to attain that level. Is highly competitive in all his activities. Sees personal relationships as means to ends. No contradictory evidence, i.e.,
of inconsistency or of ambivalent feelings about competitive behavior.

Wants high success in most of his endeavors and is willing to put in more than average work. Is strongly competitive in some areas.

Is interested and will work sporadically toward reaching certain goals, but won't "knock himself out." Desires status and recognition but does not show strong persistence in efforts to attain them.

Feels a few things are important to attain but does very little toward that end. Would like to have success fall in his lap without much effort on his part.

Will not actively try to attain success. Feels future will take care of itself—drifts. Refuses to compete in any situation.