A STUDY OF THE RELATIONSHIP BETWEEN THE NEED TO
ACHIEVE, FIELD INDEPENDENCE, AND GRADE POINT
AVERAGE OF COLLEGE STUDENTS

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A STUDY OF THE RELATIONSHIP BETWEEN THE NEED TO ACHIEVE, FIELD INDEPENDENCE, AND GRADE POINT AVERAGE OF COLLEGE STUDENTS

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By

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Studies in motivation and in perception have yielded a complex body of information about human behavior. Motivation born of the need for achievement (n Ach), complex in itself, has often been singled out for study, such as in the extensive research of McClelland (15, 16) and Murray (19). In addition, n Ach has been studied in relation to various facets of human behavior and personality, including perception. Witkin et al. (24) have conducted studies that have contributed greatly to knowledge of the role of personality in perception.

In the English and English (6) discussion of motivation and motive, the terms "motivation," "motive," and "drive" are interchangeable in general usage, though each has a specific meaning.

Discussing the origin of motives, McClelland reported that "... all motives are learned, that they develop out of repeated affective experiences connected with certain types of situations and types of behavior" (15, p. 275).

To Murray, a "need" is a hypothetical construct for which "drive" is a synonym. He characterizes the nature of
an overt or manifest need by the following:

1. A typical behavioral trend or effect.
2. A typical mode.
3. The search for, avoidance or selection of, attention and response to one of a few types of press.
4. The exhibition of a characteristic emotion or feeling.
5. The manifestation of satisfaction with the achievement of a certain effect, or the manifestation of dissatisfaction when there is failure to achieve a certain effect (19, p. 124).

Turning attention specifically to n Ach, Rethlingshafer stated that n Ach is "... one of the most studied of the culturally influenced dynamic tendencies (20, p. 173)." As previously noted, Murray included n Ach in his list of fifteen manifest human needs. Murray defined n Ach as the need to overcome obstacles, to exercise power, to strive to do something difficult as well and as quickly as possible. (This is an elementary Ego need which alone may prompt any action or be fused with any other need) (19, pp. 80-81).

In addition, Murray outlined n Ach in the following manner:

Desires and Effects: To accomplish something difficult. To overcome obstacles and attain a high standard. To excel one's self. To rival to surpass others.
Kinds of Achievement: The n Ach is focalized according to kind of Interest. For instance: the desire for athletic success... the desire for intellectual distinction...
Feelings and Emotions: Zest, ambition....
Actions: To make intense, prolonged and repeated efforts to accomplish something difficult....
Social forms: Every recognized profession or occupation may be regarded as a channel for the n Achievement (19, p. 164).

According to Crandall et al. (3), n Ach is presumably developed in the same way as other need systems--as a
product of social learning situations and reinforcements encountered in everyday life. Even as children emerge from infancy, individual differences in achievement motivation are noticeable.

McClelland et al. gave further information about the social nature of $n$ Ach in stating that the situations for achievement motivation involve "standards of excellence." Culture and parents impose the standards upon children, and the children react with competition with the standards.

It follows that those cultures or families which stress "competition with standards of excellence" or which insist that the child be able to perform certain tasks by himself—such cultures or families should produce children with high achievement motivation. . . . if a family does not set high standards of excellence, or if it does not permit the child to compete or strive to meet them on his own, then he could not be expected to have had the affective experiences connected with meeting or failing to meet achievement standards which cumulatively produce an achievement motive (15, pp. 275-276).

Rethlingshafer (20) agreed that social values greatly influence how much a child is interested in achievement-oriented activities. Achievement is represented by different activities according to various cultural or social groups.

Since socialization so greatly influences $n$ Ach, it follows that the social learning that occurs within the family structure would account for a large part of this influence. Baldwin (1), reporting his study on the effect of parent behavior upon child behavior, found that the main
socialization effect of parent behavior upon the preschool child is to raise or lower the child's willingness and ability for active behavior toward his environment.

Sears (21) gave a possible clue to a child's level of active behavior toward his environment and indicated that there are predictable relationships between parental child rearing practices and children's dependency behavior. Possibly when parental control stunts this kind of active behavior, children are more likely to develop dependency behavior.

Crandall et al. (3) lend further support to this idea in their study of thirty nursery-school-age children and their mothers. The mean Stanford-Binet IQ of the children was 118, with a standard deviation of 18. The children were observed in nursery school free play and in interaction with their mothers. Each child's behavior was rated on each of four social behavior variables: amount of achievement effort, approval seeking, help seeking, and emotional support seeking. The mothers were also rated for the degree to which they rewarded the child for behavior in each of these four variables.

Results indicated that high achieving children were less dependent on adults for help and emotional support. It was also found that neither independence training nor maternal affection was predictive of the children's achievement behavior, but direct maternal rewards for achievement efforts
and approval seeking were. Independence training and the rewarding of achievement were positively related, though not predictive. It was concluded that

Dependent children are more apt to rely on other persons and less likely to find occasions to develop achievement skills or to experience satisfactions for independent accomplishments. Independence training, as well as direct parental reinforcements of children’s achievement efforts, then, might be expected to foster children’s achievement development (3, p. 244).

Madsen, in reviewing Murray’s theory of motivation, implied a similar relationship in stating that “Whether the action caused by the need leads to success or to disappointment often has a determining influence upon the further development of the personality . . .”(13, p. 137).

McClelland hypothesized that n Ach scores would be highly related to the amount of stress a culture placed on independence training. He noted that Friedman found a highly significant relationship between severity of independence training in childhood with the amount of achievement imagery in folk tales of eight various American Indian cultures. McClelland stated:

This supports the hypothesis that achievement motivation develops out of parents’ concern that children “stand on their own feet” rather early in life and learn to do things for themselves (16, p. 412).

This was further confirmed by McClelland (16) by correlating n Ach scores of American college males with their own ratings of their parents’ behavior toward them on the
dimensions of Democratic-autocratic, Acceptance-rejection, Indulgence, and Casualness. The higher the n Ach score, the more the students rated parents rejectant, suggesting the son was forced to stand on his own feet or thought he was forced to do so.

It is interesting to note the observation of Mednick and Wertheim (17) that the writings of McClelland and Witkin suggest a relation between field independence and n Ach; that is, McClelland's analysis of the origin of n Ach and Witkin's treatment of the development of field independent modes of perception. McClelland and Witkin attribute low n Ach and perceptual field dependence to restrictive parental pressures and few demands for independent action in childhood.

Mednick and Wertheim (17), in testing this suggested relationship, predicted a positive correlation between field independence and n Ach. Thirty-one female and eleven male undergraduates were tested for n Ach, by use of a short, modified Thematic Apperception Test (TAT), developed largely by McClelland and his colleagues (15). Field independence was measured by the short form of the Witkin Embedded-Figures Test (EFT). The results indicated a significant relationship—the higher the achievement motive, the greater the field independence.

Spigel and Honigfeld (22) replicated the Mednick and Wertheim study, using fifteen male and thirteen female subjects and checking for sex differences. The results suggested that the hypothesis was pertinent only to females.
Marlowe (14) hypothesized that field independence is positively correlated with the following Edwards Personal Preference Schedule (EPPS) variables: Achievement, Autonomy, Dominance, and Intraception, and negatively with Succorance. The Thurstone adaption of the Gottschaldt EFT was used as a measure of field independence. The tests were given to fifty-seven female and twelve male subjects. Intraception and Succorance were the only significant correlations. Marlowe suggested that the lack of a significant correlation for n Ach could have been due to the difference in n Ach as measured by a projective technique, Thematic Apperception Test, and the Edwards Personal Preference Schedule.

Witkin offered the following tentative explanation of the relationship between perceptual modes and personality organization:

The perceptual ability to keep an item "separate" from its context depends first upon factors in the situation of the task that operate for or against "separation." Within these limits there are individual differences in ease of separating an item from its context, related to the person's tendency toward active coping or passive submission with respect to the environment, and to the nature of his self-concept (24, p. 489).

Witkin also stated that passivity tends to reduce possibilities for achievement, thus further lowering self-esteem and self-acceptance, which are two important factors in a mature, independent self-concept.
In recent years, it has gradually been recognized that in order to understand the process of perception, it must be studied in the context of the overall psychological organization of the perceiver. It is necessary to determine how an individual's perception is related to his emotions, motivations, etc., as well as how it is related to the perception of others in a given circumstance.

Systematic proof that motivational factors are important in perception, and that perceptions therefore directly connected with the main stream of the individual's psychological life, is significant for two reasons. First, it necessarily leads to a broadening of our current theories of perception. Second, it provides the possibility of using perceptual techniques as a means of understanding and diagnosing general personality (24, pp. 2-3).

Witkin's systematic research program on perception was started in 1942. The purpose of the first experiment was to determine the factors responsible for maintaining upright position in space. This process is of great importance, as it involves constant adjustment to the environment.

Several characteristics of the process of orientation toward the upright are useful in studying the determinants of perception. Since orientation is so important to a person, he is deeply involved in situations concerning it, and thus it is likely that his performance in such a situation will be influenced by his psychological make-up. Orientation tests confront a person with a situation often encountered in everyday life, that is,
... it is necessary to choose between standards based on one's own impulses and feeling and standards derived from environmental pressure. To the extent that there is continuity in the individual's psychological operations, it is very likely that the person's characteristic way of handling this important kind of situation may be revealed in our tests (21, p. 14).

People usually establish the upright readily, based upon the stable representation of the upright in our surroundings and the possession of adequate sensory equipment for its detection. The force of gravity corresponds to the true upright, and individuals continually make postural adjustments to it. Our visual environment provides a framework, the outline of which usually represents the true horizontal and vertical, thus giving further basis for adjusting to the upright. Since the gravitational and visual uprights usually coincide, our impression of the upright is unified. Thus, it is clear that to find whether an impression of the upright is formed on the visual or gravitational basis, these two determinants must be separated (24).

Witkin and his associates developed experimental situations to separate these two factors of the determination of the upright. The situations did reveal individual differences in perception, but not the extent of or factors causing the differences.

Three of the experimental situations were standardized, together representing all the fundamental aspects of perception (perception of position of an object in a field, of
one's own body, and of the whole field). The three situations that were standardized were the rod-and-frame test, the tilting-room-tilting-chair test, and the rotating-room test. These tests revealed a wide range of differences among individuals. Some subjects relied mostly upon the visual field and others mostly upon bodily position for determining the upright. In addition, women tended to rely more upon the visual field than bodily position than did men (24).

To investigate self-consistency in perception, subjects performed two kinds of situations—those requiring orientation to the upright, and those involving perceptual processes other than orientation. It was established that people are self-consistent in their mode of space orientation. It was also found that a person's mode of orientation tended to remain stable over long periods of time (24).

A study of the effects of training on modes of orientation showed that training could lead to a less ready acceptance of the visual framework. Also, training in one mode of orientation was to some extent transferred to other kinds. But this change did not seem to be a change in the person's initially preferred way of perceiving. The change observed was due to a greater effort to "figure things out" and an increased ability to interpret situations.

The fact that perception itself—in the sense of the person's immediate impressions—was apparently not subject to change was a further indication that the kind of perception shown by an individual
represents a deep-rooted feature of his psychological make-up (24, p. 10).

All three orientation tests involve the ability to perceive a part of a field independently of its surroundings. To see whether this ability is a general characteristic of a person's perception, a situation other than the three orientation tests was needed. The EFT filled this need. It requires the subject to extract an item from its context, but it does not involve orientation toward the upright or use of bodily position. In this test, the subject locates a simple hidden figure within a larger complex figure. The subject's speed in doing this measures his ability to remain uninfluenced by the context of the larger figure (24).

Correlations between the EFT and the orientation tests were in the expected direction: sixteen of the twenty-six correlations were significant at the .01 level of confidence, and three at the .05 level. The results indicated that "... dependence on the visual field in the orientation situations is related to difficulty in extracting a hidden item from its complex visual context" (24, p. 85). Stability over time was also evidenced, just as in the orientation tests.

On tests with the EFT alone, women definitely found it more difficult to overcome embeddedness than men—women were much more influenced by the field. This sex difference is evident at all ages, but the difference is most evident in adults. The greater field dependence of women is congruent
with the difference in the roles that men and women are expected to assume in our society (24).

The perceptual tests, including the EFT, were correlated with interview scores used as a measure of personality variables. Correlations indicated the following tendencies for field-dependent subjects: to lack insight, repress impulses, be passive, yield to inferiority feelings, and be tense. Field independent subjects showed trends opposite to these (24).

A further study relating perceptual tests to a human figure-drawing test showed that drawings of field-dependent subjects reflected a low evaluation of their bodies, infantile defenses against anxiety, lack of self-assurance, passivity, and difficulty accepting an adult role. Again, field-independent people showed opposite characteristics (24).

In a similar study using the Thematic Apperception Test, field-dependent people tended to produce stories with un-assertive central characters, while the more analytical field-independent approach produced a more self-assertive central character (24).

Three types of personality characteristics were found to be particularly relevant to performance in perceptual tasks. These were the way a person related to his environment, his management of impulses and strivings, and his conception of himself. Regarding this first characteristic, passivity is associated with field-dependent perceptual performance and activity with field-independent performance.
Opposite trends also occur in the second characteristic. Field-dependent people had a lack of awareness of inner life and a fear of and poor control of aggressive and sexual impulses. Field-independent people showed a directly opposite trend.

Concerning the third characteristic of self-evaluation, field-dependent people showed lower self-esteem, while field-independent people were more self-accepting and confident. In summary, these are the results revealed in Witkin's intensive study of a group of young, normal adults, and confirmed in studies with children and hospitalized psychiatric patients:

... field-dependent persons tend to be characterized by passivity in dealing with the environment; by unfamiliarity with and fear of their own impulses, together with poor control over them; by lack of self-esteem; and by the possession of a relatively primitive, undifferentiated body image (24, p. 469).

Field independent people

... tend to be characterized by activity and independence in relation to the environment; by closer communication with, and better control of their own impulses; and by relatively high self-esteem and a more differentiated, mature body image (24, p. 469).

Some investigators have interpreted the ability to overcome embeddedness as being the ability to overcome the effects of distracting, rather than embedding, contexts. Thus, an embedding context would be a special case of a distracting context. Karp reported some studies supporting
this interpretation, and conducted a study to test the issue of distraction versus embeddedness. Differentiating the issues, he said that, "In effect, a distracting context may be thought of as obscuring a critical item without changing the nature of the item, whereas an embedding context serves to obscure a critical item because it changes the nature of the item" (10, p. 296).

Considering the relationship between the writings of McClelland and Witkin, it would seem that a measure of n Ach and a measure of field independence would be positively correlated. That is, as n Ach increases, so would field independence.

Rethlingshafer (20) pointed out that n Ach would be correlated with increased vigor of performance of those things in which achievement is admired. Since achievement in school is usually admired in the Western culture, it follows that students with a high n Ach would perform school-learned acts with greater vigor than students with low n Ach.

The issue of intelligence needs to be considered. Goodenough and Karp (8) noted that several studies suggested that field-dependent subjects tend not to do as well as field-independent subjects on standard intelligence tests. Their study was an attempt to explore this relationship by factor analyses of intercorrelations among tests of intelligence and field dependence.
Of the three types of factors tested by the Wechsler scales, the performance factor is particularly relevant to Witkin's hypothesis, since the performance factor involves closure and visualization. Thus tests of field dependence and the Wechsler performance subtests should define a common factor.

The Goodenough and Karp (8) study involved a correlation matrix of scores for tests of field dependence (EFT, rod-and-frame test, and tilting-room-tilting-chair test) and subtest scores from each of the Wechsler factors. Results gave some support to the hypothesis that there is a factor common to intellectual and perceptual tests and involving the capacity to overcome an embedding context. Of course, it is recognized that some intellectual tasks may be related to tests of field dependence for other reasons. For instance, some personality correlates of field dependence may influence performance on certain intellectual tasks.

Since achievement in school is admired in the Western culture and field-independent subjects tend to have higher scores on certain intelligence tests than do field-dependent subjects, it is possible that students with a higher n Ach would have higher grade-point averages (GPA's).

On two studies, McClelland (16) found that the n Ach score was highly correlated with college grades, but was not in a third study.
Lunneborg and Lunneborg (12) correlated EPPS scores for college counsellees with cumulative GPA's, but they did not find any EPPS scores to have predictive value for the GPA's.

In a later study, Lunneborg and Lunneborg used pattern analysis with the EPPS scores, finding that "... academic achievement for both sexes tentatively appeared to be associated with high needs for Achievement and Intraception, and low need for Abasement" (11, p. 389). But failure of further data to add to prediction as expected caused them to say that the use of EPPS pattern information was far from established.

A related study by Gebhart and Hay (7) investigated some personality correlates of under- and over-achievement. Over-achievers were those whose first semester grades were higher than predicted, and underachievers were those whose first semester grades were lower than predicted. Using the EPPS scores and the GPA's of freshmen, it was found that the over-achievers scored significantly higher than underachievers on Achievement, Order, Intraception, and Consistency scales, and significantly lower on Nurturance, Affiliation, and Change scales. The subjects were also divided into high and low ability groups. The high ability subjects scored significantly higher on Achievement, Exhibition, Autonomy, Dominance, and Consistency than did the low ability group, and lower on Deference, Order, Abasement, and Nurturance.
Purpose and Hypotheses of the Study

The various preceding studies suggest a possible relation among n Ach, field independence, and grade point average. The purpose of this study was to investigate this relationship among n Ach, field independence, and GPA. The following hypotheses are therefore proposed:

Hypothesis I.—N Ach will be positively correlated with field independence for both the male and the female groups.

Hypothesis II.—N Ach will be positively correlated with the GPA's for both the male and female groups.

Description of the Measuring Instruments

In this study, the Edwards Personal Preference Schedule (EPPS) was used as a measure of n Ach and the short form of the Witkin EFT as a measure of field independence.

The EPPS was developed to measure fifteen relatively independent, normal personality variables, based on H. A. Murray's (19) list of manifest needs (Appendix). The test itself consists of a booklet of 225 pairs of statement choices matched for social desirability. The subject records choices on an answer sheet. Scoring results in raw scores which can be changed to percentile scores according to applicable norms. The raw score ranges from 0 to 28. The higher the raw score for a particular variable, the more the subject has chosen statements indicating certain variables as being more characteristic of him than other variables.
The Witkin EFT was developed as a part of Witkin's (24) studies in perception. The EFT can determine the ease with which a person can extract a given figure from a larger, more complex context, and therefore his ability to remain uninfluenced by the context of the complex figure.

The test consists of eight cards of simple figures and twenty-four cards of complex figures. In the short form, as proposed by Jackson (9), twelve selected complex figures and the corresponding simple figures are used. The examiner records the time the subject takes to see the embedded figure, providing a measure of how dependent or independent the subject is on the embedding context in the complex figure. Detailed procedure and instructions are given in Chapter II of this study.


CHAPTER II

METHOD

Subjects

The subjects were volunteers from four different classes at a summer session of a junior college. Forty-seven volunteers completed both the EPPS and the EFT. There were twenty-two males and twenty-five females, ranging in age from seventeen to forty-seven. There was an approximately equal number of freshmen and sophomores, plus three special students. The subjects were Caucasian except for two Negroes, one male and one female.

Procedures for Collecting Data

At the beginning of each of the four classes, the nature of the research was explained to the students. Confidentiality of data for individuals was assured. Those who volunteered to participate were given a copy of the EPPS booklet and an answer sheet. The directions were then read aloud to the students and any questions answered. The students were further instructed to complete the test at their convenience, away from distractions, and to return the booklets and answer sheets in two days.
The volunteers then signed a time schedule to take the EFT. The EFT was administered individually, according to the short form of the Witkin EFT, as revised by Jackson (1). The following instructions were read to each subject:

I am going to show you a series of colored designs. Each time I show you one of these designs, I want you to describe the overall pattern that you see in it. After examining each design, I will show you a simpler figure which is contained in that larger design. You will then be given the larger design again, and your job will be to locate the smaller figure in it. Let us go through one to show you how it's done (2, p. 7).

The subject was then shown the practice complex figure for fifteen seconds. The complex figure was then removed and the practice simple figure shown to the subject for ten seconds. The simple figure was removed and the complex figure shown to the subject again, with instructions to find the simple figure in it and trace it with a blunt stylus without touching the paper. The time the subject took to find the simple figure was recorded. Then further instructions were given.

This is how we will proceed on all trials. I would like to add that in every case the smaller figure will be present in the larger design. It will always be in the upright position. There may be several of the smaller figures in the same larger design, but you are to look only for the one in the upright position. Work as quickly as you possibly can, since I will be timing you; but be sure that the figure you find is exactly the same as the original figure both in size and in proportions. As soon as you have found the figure, tell me at once. If you ever forget what the small figure looks like, you may ask to see it again. Are there any questions?
The same presentation procedure was used on all twelve trials. The subject's score for each trial was the time needed to find the simple figure. If the subject failed to find the figure within five minutes, five minutes was his score and the trial was completed. While searching for the simple figure, the subject was allowed to see the simple figure as often as he wished, during which time the stop watch was stopped and the complex figure concealed. The score for each subject's test was the sum of the time taken to locate simple figures for all twelve trials.

The EPPS answer sheets were scored by hand, obtaining a raw score for all fifteen variables for each subject. Data from the EFT were in the form of the sum of the seconds for all trials for each subject. Each subject's college GPA was then obtained from official transcripts.

Procedures for Analyzing Data

The collected data consisted of the fifteen EPPS variables, the EFT score, and the GPA, making a total of seventeen variables for each subject. The data were then transferred to computer programming sheets for computer analysis. The mean of each variable for the male and the female groups was obtained. Simple correlation coefficients were obtained, each mean variable being correlated with every other mean variable for both the male and the female groups. The obtained coefficients were the bases for the analysis of the results of this study.
CHAPTER BIBLIOGRAPHY


CHAPTER III

RESULTS

The chief interest in this study was in the relationships between variables 1, 16, and 17 (n Ach, GPA, and field independence, respectively). For the male subjects, a correlation coefficient of .423 is required for significance at the .05 level of significance. As indicated in Table I, there were no significant correlations between the variables for the male group.

TABLE I

CORRELATION COEFFICIENTS BETWEEN VARIABLES 1  
(n Ach), 16 (FIELD INDEPENDENCE),  
AND 17 (GPA) FOR MALES

<table>
<thead>
<tr>
<th>Variables Correlated</th>
<th>Coefficient</th>
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<tr>
<td>1 and 16</td>
<td>.3121</td>
</tr>
<tr>
<td>1 and 17</td>
<td>-.1543</td>
</tr>
<tr>
<td>16 and 17</td>
<td>-.0479</td>
</tr>
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</table>

The correlation coefficient between n Ach and GPA was .3121, which was in the expected direction. A coefficient of -.1548 was obtained between n Ach and field independence and -.0479 between GPA and field independence. It is noted, however, that a significant positive correlation coefficient of .4519 was obtained between Nurturance, as defined in the EPPS manual (1), (see Appendix) and field independence.
For the female subjects, a correlation coefficient of .396 is required for significance at the .05 level of significance. There were no significant positive correlations between the variables concerned, but there was one significant negative correlation, as noted in Table II.

**TABLE II**

**CORRELATION COEFFICIENTS BETWEEN VARIABLES 1 (n ACH), 16 (FIELD INDEPENDENCE), AND 17 (GPA) FOR FEMALES**

<table>
<thead>
<tr>
<th>Variables Correlated</th>
<th>Coefficient</th>
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<tbody>
<tr>
<td>1 and 16</td>
<td>.0863</td>
</tr>
<tr>
<td>1 and 17</td>
<td>-.0586</td>
</tr>
<tr>
<td>16 and 17</td>
<td>-.4914*</td>
</tr>
</tbody>
</table>

*p < .05

The correlation coefficients between n Ach and GPA, and n Ach and field independence, were .0863 and -.0586, respectively. A significant negative correlation of -.4914 was obtained between GPA and field independence. In addition, Aggression, as defined in the EPPS manual (1) (see Appendix), and field independence were negatively correlated, with a coefficient of -.5188.

Table III gives the mean and standard deviation for the three variables concerned for the male group and the female group. The mean for the male n Ach raw scores was 16.0000, with a standard deviation of 5.3851. For the females, the mean n Ach score was 16.3600, with a standard...
deviation of 4.4441. Thus, there is no indication of a significant sex difference for the \( n \) Ach variable.

The mean GPA for males was 2.5036, with a standard deviation of .9405, and for the females 2.6152, with a standard deviation of .7905. Again, there was no significant sex difference.

\[
\text{TABLE III} \\
\text{SEX DIFFERENCES IN NEED FOR ACHIEVEMENT, FIELD INDEPENDENCE, AND GRADE POINT AVERAGE}
\]

<table>
<thead>
<tr>
<th>Sex</th>
<th>Variable</th>
<th>Mean</th>
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<tr>
<td>Male</td>
<td>( n ) Ach</td>
<td>16.0000</td>
<td>5.3851</td>
</tr>
<tr>
<td>Female</td>
<td>( n ) Ach</td>
<td>16.3600</td>
<td>4.4441</td>
</tr>
<tr>
<td>Male</td>
<td>GPA</td>
<td>2.5036</td>
<td>.9405</td>
</tr>
<tr>
<td>Female</td>
<td>GPA</td>
<td>2.6152</td>
<td>.7905</td>
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<tr>
<td>Male</td>
<td>Field independence</td>
<td>1027.2727</td>
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<tr>
<td>Female</td>
<td>Field independence</td>
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</tbody>
</table>

The EFT scores for field independence did indicate some sex difference. The mean number of seconds required by the male group to discover the embedded figures was 1027.2727, with a standard deviation of 1404.5263, whereas for the females, the mean number of seconds was 729.8000, with a standard deviation of 478.8038, resulting in a difference of 297.4727 seconds or 4.96 minutes. It is interesting to note that the Witkin (6) studies indicated results
opposite to this, in that males overcame embeddedness much more quickly than females.

For the most part, the results of this study were not in the expected direction, and both agreed and disagreed with the findings of similar research (2, 3, 4, 5, 6).


CHAPTER IV

DISCUSSION OF THE RESULTS

The results of this study did not support the hypotheses. The n Ach was not found to be positively correlated with field independence or GPA for either the male or female subjects. Instead, a significant negative correlation was found between GPA and field independence for the females.

These results are in opposition to those of Mednick and Wertheim (6), who found that higher achievement motive indicated greater field independence. Of course, it must be noted that they used the TAT as a measure of n Ach, rather than the EPPS, as used in this study. Marlowe (4) used the EPPS but did not find n Ach and field independence correlated. He suggested that the lack of a significant correlation could have been due to the difference in n Ach as measured by a projective technique and the EPPS. This suggestion is also applicable to the present study.

Concerning the correlation of n Ach with GPA, this study did not find a significant positive relationship. McClelland (5) reported two studies that did find n Ach to be highly correlated with college grades, but a third study did not. Other studies (2, 3) found no conclusive evidence,
though some results showed a possible relation between academic achievement and n Ach.

In the present study, the lack of a significant positive correlation between n Ach and GPA could have been influenced strongly by the particular nature of the sample. Specifically, since most of the students were classified as freshmen or sophomores, their college GPA's were based on a small number of courses. Nevertheless, inspection of high school GPA's for the subjects indicated general agreement for high school and college GPA's. Another consideration is that these students might have been attending a summer session at a junior college for reasons that would confound or bias a correlation between n Ach and GPA. In addition, GPA may be a misleading measure of academic achievement in that grades themselves might be worked for due to external pressures, such as parental demands or expectations, rather than an internalized n Ach. On the other hand, a student might have a highly developed n Ach but be limited by circumstances, or lack of ability or desire, to obtain academic achievement as measured by the convention and standards of the educational system.

Further analysis of the results showed a significant positive correlation coefficient of .4519 between Nurturance and field independence for males. This correlation was in keeping with the nature of these two variables in that field-independent people tend to relate to their environment in an
active, rather than passive, manner (7), and people who score higher in Nurturance (see Appendix) would tend to be actively helpful to others (1).

The negative correlation coefficient of -.5188 between Aggression and field independence for females was also corroborated by the nature of these variables. Field-independent people tend to control their impulses (7) and people who would score higher in Aggression (see Appendix) would tend to have an attacking, angry disposition (1), showing a poor control over their impulses.

The present study found an unexpected sex difference for field independence. Table III indicates that, on an average, females were able to overcome embeddedness more easily than males. This is in conflict with Witkin's (7) results, which have shown males to overcome embeddedness much more easily than females. Witkin attributed this sex difference to the difference in the male and female roles of our society. The results of this study suggest the possibility that among college groups, sex roles are not so rigid as in young adult groups of the general population. In addition, sex roles in general may not now be so well-defined as in the decade when Witkin began his studies.

It should be taken into consideration that although the females required less average time to overcome embeddedness, the males had a greater standard deviation. This indicates a greater variability in the speed with which males overcome
embeddedness. That is, some males were faster than average and others were slower than average to a greater degree than females. Thus, a few unusually slow males could inflate the male mean time for overcoming embeddedness.

The lack of significant correlations between n Ach, field independence, and GPA could indicate that the measures used were not adequately sensitive to these variables or were vulnerable to the biasing effects of the limitations. In addition, it is recognized that personality characteristics not accounted for by the measures used could possibly bias the results.

In final analysis, the nature of the sample should again be considered as possibly biasing the results for correlations between n Ach, field independence, and GPA. For instance, the sample was small, thus requiring a higher correlation in order to obtain significance. In addition, the subjects were of necessity volunteers, rather than being selected by random sampling. As previously noted, a further biasing factor could be that the students were selected from a summer session of a junior college. Such limitations not only bias results but also limit generalizations.
CHAPTER BIBLIOGRAPHY


The present study was conducted as an investigation of the relationship between the achievement motive ($n_Ach$), field independence, and grade point average (GPA), based mainly on the studies and theories of McClelland (2, 3) and Witkin (4, 5). McClelland and Witkin attribute low $n_Ach$ and perceptual field dependence to restrictive parental pressures and few demands for independent action in childhood. In addition, since academic achievement is thought to be desirable in our culture, GPA would seem to be related to $n_Ach$ and thus to field independence.

To investigate this relationship, forty-seven volunteers from a junior college were given the Edwards Personal Preference Schedule (EPPS) (1) as a measure of $n_Ach$, and the short form of the Witkin Embedded-Figures Test (EFT) (4) as a measure of field independence. Then each subject's official college GPA was obtained. The data obtained from these measures, resulting in seventeen variables, was programmed for computer analysis. A mean for each variable was obtained, and a simple correlation was run, each mean being correlated
with every other mean. The results were based on the obtained coefficients.

For the males, there were no significant correlations between n Ach, field independence, and GPA. There was a significant positive correlation between Nurturance and field independence.

For the females, there was a significant negative correlation between field independence and GPA. The correlations between n Ach and GPA and n Ach and field independence were non-significant.

The only sex difference noted in the three main variables was in the mean EFT score for field independence. Females took less average time than males to overcome embeddedness, which conflicts with the results of related studies. This unexpected result could be due to a change in attitudes toward sex roles or to the attitudes of college students in particular.

The discussion of the results focused on possible reasons for the lack of support for the hypotheses. Limitations of the sample were particularly noted, such as a limited sample size and use of volunteers from a junior college summer session. The limitations of the measures were also considered.

Further research in similar studies could employ other means for measuring the variables, such as using projective
techniques and self-report questionnaires. A larger, more representative sample would add to the validity and generalization of the results.

Whether or not there is a significant relationship between n Ach, field independence, and GPA is left to further investigation, as the present study and related research have not resulted in conclusive evidence, either positive or negative.


EPPS MANUAL DEFINITIONS OF MANIFEST NEEDS

1. Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.
4. Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about
problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing,
to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick at a problem even
though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to blame others when things go wrong, to read newspaper accounts of violence.
BIBLIOGRAPHY


