THE USE OF DEPTH INTERVIEWING TO EXPLORE THE MOTIVATIONAL FACTORS UNDERLYING ACHIEVEMENT OF ELEVENTH GRADE HIGH SCHOOL BOYS

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Michael P. Joseph

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This is to certify that the

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THE USE OF DEPTH INTERVIEWING TO EXPLORE THE MOTIVATIONAL FACTORS UNDERLYING ACHIEVEMENT OF ELEVENTH GRADE HIGH SCHOOL BOYS

By

Michael P. Joseph

AN ABSTRACT

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Michael P. Joseph

ABSTRACT

The purpose of this investigation was to test certain bi-polar factors pertaining to over- and under-achieving male high school juniors. These factors were based on theories relating to the motivational situation in an academic setting, to the personality characteristics of over- and under-achievers, and to parental factors as they might be related to academic achievement. The factors were formulated by participants in the Farquhar Motivation Project conducted at Michigan State University.

The eleventh grade classes in nine high schools constituted the sample for the Farquhar Project. Over- and under-achievers were identified by means of a Two-Step Regression technique which used the students' scores on the Differential Aptitude Test - Verbal Reasoning and the California Test of Mental Maturity - Language, as well as their Grade Point Average. From this group of deviant achievers five over- and five under-achieving boys were selected for this investigation This sample of ten represented the full range of academic ability as measured by the DAT-VR. One over- and one under-achiever was selected from each ability quintile.

Questions were designed to assess the presence, in this sample of ten, of the factors pertaining to the academic motivational situation, and to the personality characteristics of over- and under-achievers. These questions were presented in a series of two semi-structured interviews held with each boy in the sample. The interviews were recorded and presented to three judges trained in clinical and counseling psychology. Ratings were made on a bi-polar scale consisting

of five discrete points. The high end of the scale represented the factor as hypothesized for over-achievers, the low end of the scale the factor as postulated for under-achievers. The judges rated each student on every factor. Judges had no knowledge of the student's ability or achievement classification. All ratings were made solely on the impact of the interview.

An analysis of variance technique was used to measure the average reliability of all ratings, with between-rater variance removed, for each factor. t-tests were calculated to test the significance of the difference in the means of the ratings given to the five over-achievers and the five under-achievers on each of the factors. Reliability coefficients ranged from .343 to .795, and the t-tests were significant at the .05 level and better for the following bi-polar factors:

For Over-Achievers	For Under-Achievers
1 Long Term Involvement	1 Short Term Involvement
2 Unique Accomplishment	2 Common Accomplishment
3 Competing with a Maximal Standard of Excellence	3 Competing with a Minimal Standard of Excellence
4 Controlled Anxiety	4. Free floating Anxiety
5. Positive Authority Relationships	5. Hostility Toward Authority
6. Independence	6. Dependence
7. Adequate Interpersonal Relationships	7. Inadequate Interpersonal Relationships

One of the factors, the Academic Orientation - Social Orientation Factor did not discriminate significantly between over- and under-achievers, respectively

Parents of the ten boys in the sample were interviewed in order to assess the presence of certain familial factors which were theoretically related to academic achievement. Interviews were recorded and presented to the same three judges who rated the students. Ratings were made on a discrete five-point scale one pole of which represented the

factor as hypothesized for parents and over-achieving children, the other end for parents and under-achieving children. The average reliability of ratings, with between rater variance removed, was calculated for each factor. t tests were made to test the significance of the difference in the means of the ratings given the factors for the over achieving group and the under-achieving group. The range for the reliability coefficients extended from .151 to .663. One coefficient equaled a - .138. Only three of the factors differentiated between over- and under-achievers at the .10 level of significance, the first two of these in a direction opposite to theory.

For Over Achiever	For Under-Achievers
1 Poor Parent-Child Interaction	1 Good Parent Child Interaction
2 Rejection	2 Acceptance
3 No Discipline	3 Discipline

The remaining four factors were not significant.

4 Achievement Pressure	4 Non-achievement Pressure
5 Permissiveness	5 Non permissiveness
6 Non possessiveness	6 Possessiveness
7 Undemocratic Guidance	7 Democratic Guidance

Significant items from two of the Farquhar Project inventories were presented to parents and teachers. Items from the Perceived Parental Attitudes Inventory were presented to the parents, and teachers were asked to respond to items from the Weird Rating List. These responses were compared to those made by the sample of ten deviant achievers, and to the responses given the items by the Farquhar validation groups of over- and under-achievers. Chi squares were calculated to measure the relationship between the eight response groups.

1 Parents and Deviant Achievers 2 Parents and Under-achieving sons
3 Parents and Validation Group of Over-achievers 4 Parents and Vali

dation Group of Under-achievers. 5. Teachers and Over-achieving Students. 6. Teachers and Under-achieving Students. 7. Teachers and Validation Group of Over-achievers. 8. Teachers and Validation Group of Under-achievers.

Significant chi-squares (at .02 level) were found for all but the Teachers-Validation Group of Under-achievers.

Though the chi-square for Parents and Validation Group of Under-achievers was significant, a phi-coefficient computed from it indicated a negative correlation between the responses of the group.

Although this study was conducted on a small sample of ten students, several new interpretations were provided for theories previously tested. Some implications for further research were presented which would incorporate the dynamic inter-relationship of the student's personality, environment, and self-perception.

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To

My Mother and Father

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CHAPTER I

THE PROBLEM

Success in the area of academic achievement has held the focus of attention since the beginning of formal education. It would be true to say, however, that at no time in the history of the American educational system has the need for using student talents been more pressing. Much money, and many hours of research have been spent in an attempt to discover the basic formula for successful achievement.

Aptitude, skill, and motivation have been hypothesized, by many theorists, as the bases of academic achievement. Instruments and techniques for the measurement and utilization of student aptitudes and skills have been developed, and are presently being used by administrators, counselors, and teachers at all levels of the educational ladder. In fact there is such a proliferation of measuring devices that a trained counselor is needed to select and interpret the "tests" appropriate in each locale. Unfortunately, motivation assessment has not developed to the same degree, and the dirth of information in this area hinders the progression toward an understanding of academic success and failure.

A pressing need exists for a thorough, objectively validated description of the characteristics of high and low academically motivated students. The construction of a diagnostic instrument of motivation for academic achievement might be justified solely because it would permit better educational selection and placement.[1] With selection and

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[1]William W Farquhar, "A Comprehensive Study of the Motivational Factors Underlying Achievement of Eleventh Grade High School Students," Research Project No. 846 (8458) in cooperation with the U.S. Office of Education, November 1959, p.1.

placement resting on a more empirical basis, the development of latent talent would be facilitated. Moreover, the concomitant values, such as the strengthening of curriculum, teaching methods, and counseling procedures through a clearer understanding of the nature of motivational characteristics of students, further emphasize the need for extended research in this area. Phillips[2] states:

> "Usually, regression equations (used in the prediction of academic achievement) do not take motivation directly into account despite the fact that motivation is an important factor. The term 'motivation' almost becomes a shield for ignorance. Generally, the study of motivation is a leaving-off place in the study of school achievement - and perhaps other topics as well - when it might well be considered a starting place "

Purpose of the Study

The Farquhar Motivation Study group, which began its research at Michigan State University in 1959, is presently engaged in the development of such an objective measure of academic achievement motivation. This investigation is concerned with eleventh grade high school students. Several theory-based instruments were designed using descriptive phrases which, in previous studies, were found to differentiate over- from under-achieving students. Heeding, also, the suggestion made by Woodruff[3] that theory and research in motivation, to be most productive, must concentrate on the whole person in the process of adjusting to the total situation, the project was extended to the student in his present

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[2]Erving L. Phillips, "A Note on the Use of the Term Over-Achievement in Guidance and Personnel Work," Journal of Educational Psychology, Vol. 34, May 1943, p 303.

[3]A D. Woodruff, "Motivation Theory and Educational Practice", Journal of Educational Psychology, Vol. 40, 1949, p 39.

environment. Additional instruments were constructed to elicit responses in the areas of the student's personal, family, school, and extra-curricular life. One such instrument, the semi-structured interview, was used to explore more deeply into the motivational dynamics of the male high school eleventh grade student. It is primarily with the design and execution of this technique that this dissertation is concerned.

A more detailed description of the interview, as a part of the Motivation Study, will be given later A brief summary of the contents of the other instruments, used in the investigation, is necessary in order to achieve a clear perception of the role of the interview in the total Study.

Description of the Inventories

Instruments in this project were designed to explore the motivational aspects of student perception and behavior primarily in the home and classroom environments The Perceived Parental Attitudes Inventory consisted of 150 statements about attitudes held by parents toward their children, how they should be brought up, and trained Students were asked to respond to each cue as they felt their parents would respond to it. The continuum of response categories ranged, in a four-point scale, from "strongly disagree" to "strongly agree." A second questionnaire, the Word Rating List, contained 119 adjectives which teachers could use to describe students. Response choices consisted of: Never, Sometimes, Usually, Always The subjects were requested to read each description (e.g. teachable, friendly, passive, efficient, etc.), and then to check

the response choice which they felt their teachers would check, were they rating them on these characteristics. The Generalized Situational Choice Inventory presented the eleventh graders with a series of dual situations, and they were requested to check the one they preferred. The Human Trait Inventory attempted to plumb more deeply into the structure of the student's personality. Items similar to those found in such instruments as the Minnesota Multiphasic Personality Inventory, the Bell Adjustment Inventory, and the Minnesota Personality Inventory were designed. The response choices: Never, Sometimes, Usually, Always, were also used for this test. Finally a Preferred Job Characteristics Scale required each student to choose, from a pair, the one characteristic he valued more for his future job, after completing his formal education.

Responses to the items, as well as to those of the more general Personal Data Questionnaire, provide a wealth of information about adolescent choices in their environment here and now. These perceptions and responses were, by the very nature of the cues which prompted them, of a forced-choice variety. Of course, the respondents were told that there were no right or wrong answers to the inventories. They were also instructed to respond to each item as honestly as they could.

Careful analysis of each item separately, and in combination with similar items in the other inventories, was made. Many of the statements or words were found to be inadequate in their power to discriminate between the extremes on the achievement continuum. Since all of the inventory items were based on the research findings of previous investigators, serious evaluations of these areas were made by the members of the research team. Of course, many items were found to be significantly

discriminating, and these will be combined into a single instrument which will fill a serious void in the field of personality measures

The Theory

The research project, of which this study is a part, has a dual purpose. Its first task centers around the testing of a theory of the nature of the motivational behavior manifested by under- and over-achievers. Paralleling this interest, is the concern of the research-team in the isolation of certain personality characteristics which may be peculiar to the individuals who represent the extremes in academic achievement motivation. Within the total personality many types of motivational forces interact. There are vectors which achieve their force and direction from physiological sources, while others derive their influence from societal commerce. Brookover[4] recognizes the influence of these dual factors in the development of human learning.

One of the tentative hypotheses submitted by Brookover[5] is:

> "Appropriateness of behavior is defined by each person through the internalization of the expectations of significant others. This hypothesizes the process through which each person defines his own motives or self-image. He acquires this definition by interacting with other people who are important in his life space. He refers himself to others, takes the attitude of others, and looks upon himself and judges his performance, his behavior, in the light of his conception of what others see in him. This is the time-honored concept of the looking-glass self as defined by Charles Horton Cooley and refined by numerous other social psychologists."

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[4]W. B. Brookover, "A Social Psychological Conception of Classroom Learning", School and Society, Vol. 87, February 1959, 84-87

[5]Ibid., p. 86

It is such perceptions that are explored in two of the principal instruments used in this research, namely the Perceived Parental Attitudes Inventory and the Word Rating List. Student replies to the cues presented in these inventories require, of necessity, a projection of the situation or characteristic into the behavioral framework of the parent or teacher. For it is through the behavior of these signficant others, toward the child, that form his conception of what these persons see in him.

McClelland[6], following in the same path, argues that achievement motivation is learned, that it develops out of repeated affective experiences with significant others. These experiences, in the specific sphere of n-Achievement, involve "standards of excellence" imposed on the growing child by his culture, and principally by the immediate agents of this culture, his parents, and presumably, by extension, his teachers acting "in loco parentis."

In the pursuit of the first objective, the testing of a theory of n-Achievement, emphasis is placed on McClelland's postulates. McClelland[7] defines motivation as a "condition of strong affective association, characterized by an anticipatory goal reaction and based on past associations of certain cues with pleasure and pain." He theorizes that the basic motivational pattern for achievement is determined in early child rearing practices. These practices foster the strong affective associations the child makes between goals that are parent-rewarded or parent-punished. The "needs" which are thus developed will seek fulfillment in

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[6]D. McClelland, J. Atkinson, et. al., The Achievement Motive, Appleton-Century-Crofts, New York, 1953.

[7]Ibid

the various patterns of social behavior. Among these societal interactions school success may be given a primary position by over-achievers, and a much less important place in the scheme of life by under-achievers. Thorpe[8], as well as other members of the Farquhar Motivation Study research team, describes the former group as having a "high need for academic achievement," and the latter pupils as having a "low need for academic achievement." They schematize motivation as a facet of the total personality, and n-Achievement as a type of motivation. N-Achievement includes the need to achieve in the academic forum. It is to the group who possess a high need for such achievement that McClelland's postulates apply. The reverse of these postulates are then attributed to the low-need students by the Farquhar group.

Table 1

SUMMARY OF THEORY OF HIGH NEED FOR ACADEMIC ACHIEVEMENT AND LOW NEED FOR ACADEMIC ACHIEVEMENT MOTIVATION BASIC TO CURRENT RESEARCH

Motivational Situation	
High Need for Academic Achievement	Low Need for Academic Achievement
1. Long term involvement	1. Short term involvement.
2. Competition with a maximal standard of excellence.	2. Competition with a minimal standard of excellence.
3. Unique accomplishment.	3. Common accomplishment.

[8]Marion D. Thorpe, "An Exploration of Factors Accounting for Item-Intercorrelation in an Objective Scale of Achievement Motivation", Ph.D Dissertation, Michigan State University, 1961.

Stories, elicited by the use of modified pictures from the Thematic Apperception Test, are used by McClelland[9] to illustrate the meaning of his three characteristics of need-achievement.

1. Long term involvement: One of the characters is involved in attainment of a long-term achievement goal. Being a success in life, becoming a machinist, doctor, lawyer, etc., are all examples of career involvement which permit the inference of competition with a standard of excellence
2. Competition with a standard of excellence: One of the characters in the story is engaged in some competitive activity (other than pure cases of aggression) where winning or doing as well as or better than others is actually stated as the primary concern.
3. Unique accomplishment: One of the characters is involved in accomplishing other than a run-of-the-mill daily task which will mark him a personal success. Inventions, artistic creations, and other extraordinary accomplishments fulfill this criterion.

Students characterized by a low need-achievement do not manifest the necessity of being involved in some long-term project Their goals are more immediately reached, and are not attained through competition with some standard of excellence. Such attitudes as: passing a course because it is required; studying just to pass an examination; are common to this group.

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[9]McClelland, op. cit , p. 111.

In the Generalized Situational Choice Inventory these characteristics have been incorporated into pairs of statements which typify the presence or absence of the high need for academic achievement. Items which significantly discriminated between over- and under-achievers were incorporated into the pattern of the interviews held between the student and the writer.

Parental child-rearing practices, as stated above, are held as being crucial in the formation of the "need" structure of the over- and under-achieving student. Consistent with the assumptions of McClelland, achievement motivation develops out of repeated affective experiences connected with certain types of situations which involve a "standard of excellence." If the individual is successful in these experiences, a positive affect is produced; if unsuccessful, a negative affect results. It follows that those families which stress competition with such standards, or which insist that the child be able to perform certain tasks by himself, should produce children with high achievement motivation.

Theoretical factors, review by Payne[10] and incorporated into the basic hypothesis of his research may be summarized here:

1. Achievement Pressure Factor: General concern, on the part of the parents, for the child to achieve, compete, and conform.

2. Permissiveness Factor: The child is given freedom to act and make decisions without parental consent. This factor involves the development of independence.

3. Possessiveness Factor: Excessive parental concern, especially on the part of the mother, about the dependence of the child on them. The child is not encouraged to do things on his own.

[10] David A. Payne, "An Investigation Into the Relationship Between Perception of Parental Attitudes and Academic Achievement: Paper presented at the 1961 American Personnel and Guidance Association, Denver.

4. Democratic Guidance Factor: This factor is characterized by a high degree of contact between parent and child, appearing as verbal consultation with regard to policy decisions and family rules.

5. Discipline Factor: This factor is concerned with the frequency, and nature of the discipline meted out by parents. Do disobediences result in withdrawal of privileges or physical punishment? If the child gets into trouble outside the home, is he punished or helped?

6. Rejection - Ignoring Factor: A general overt disregard for the child's wishes. A tendency on the part of parents to disregard the child as an individual member of the family. There is a tendency, in this factor, for the parents to disclaim responsibility for the child's behavior.

7 Parent - Child Interaction Factor: This factor represents a wide range of behavior involving the mother's attitudes toward the child, the father's attitude toward the child, general parental concern about the child, and the degree of acceptance by the parents of their parental role.

These factors have been translated into items whose intent is to measure the student's perception of his parents' role in the process of child-rearing. The Perceived Parental Attitudes Inventory is thus an indirect way of discovering the pattern of practices used in the student's own upbringing.

Personality traits, which may be significantly characteristic of either over-or under-achievers, have been isolated from the large body of research in the area. Traits which appear most frequently have been grouped and are given in Table 2.

Table 2

SUMMARY OF THEORY OF HIGH NEED FOR ACADEMIC ACHIEVEMENT AND LOW NEED FOR ACADEMIC ACHIEVEMENT MOTIVATION BASIC TO CURRENT RESEARCH

Personality Characteristics	
Over-Achievers	Under-Achievers
1. Controlled anxiety	1. Free-floating anxiety
2. Independence	2. Dependence
3. Academic orientation	3. Social orientation
4. Adequate interpersonal relationships	4. Inadequate interpersonal relationships
5. Positive authority relationships	5. Hostility toward authority

A brief description of each characteristic will serve to elucidate the reasons for its inclusion in the theoretical structure of the project a more discursive coverage can be found in Taylor[11].

Over-Achievers

1. Controlled Anxiety: The ability to complete tasks under stress. There is drive and intense concern which compels the person to attend to school tasks.

2. Independence: The ability to work alone without direction and the ability to make decisions without expecting someone else to solve the problems encountered in completing a task.

[11]Ronald G. Taylor, "The Personality Characteristics of Eleventh Grade Under and Over Achievers", Ph.D. Dissertation, Michigan State University, 1961.

3. Academic Orientation: The student receives more satisfaction and pleasure from academic success than from social relationships. This individual enjoys reading and studying more than actively dating or being with groups.

4. Adequate Interpersonal Relationships: The ability to get along with peers with little or no conflict. The individual is able to work and socialize with other persons without invoking hostility or dislike.

5. Positive Authority Relationships: An ability to work under the direction of teachers and parents and to accept tasks given to them and to complete them.

Under-Achievers

1. Free-floating Anxiety: That type of anxiety where the individual worries about everything. He does not complete tasks assigned to him. With this type of anxiety the individual is often intense in work attitudes but is ineffective in social relations and a non-producer in academic tasks.

2. Dependence: A tendency to lean on others instead of doing independent thinking and acting. The student allows someone else to make decisions for him. He borrows, copies, imitates.

3. Social Orientation: More satisfaction and pleasure is received from social situations than from academic learning. The individual likes to belong to active organizations such as sports. Fun and group cooperation are placed ahead of individual, competitive, objective, academic study.

4. Inadequate Interpresonal Relationships: The type of relationship in which the individual is in conflict with, is withdrawn from, his equals, superiors, or subordinates.

5. Hostility Toward Authority: The individual makes negative, challenging, unfriendly answers when called upon in class. The individual has a "chip-on-the-shoulder" attitude in relationships with teachers, principal, parents, police, and ministers.

Items, which have been designed to discriminate between over-and under-achievers in these personality areas, have been incorporated into the Human Trait Inventory.

Relation of Theory to Problem

As has been stated earlier, this study is a part of a larger research design. The theoretical structures just described serve as the foundations for the investigative action of three members of the research team, Thorpe, Payne, and Taylor. As a result of their analyses made on the items of the Situational Choice Inventory, Perceived Parental Attitudes Inventory, and the Human Trait Inventory, respectively, certain items were found to discriminate between over- and under-achievers to a significant degree. The purpose of the depth interviewing procedure was to investigate, more intensively, the factors and traits which served as item sources. Factors from the Situational Choice Inventory and the Human Trait Inventory provided the basis for the student interviews; those from the Perceived Parental Attitudes Inventory supplied the questions that were directed to the parents in the interview held with them. Finally, significant items from the Word Rating List were presented to the teachers of the sample. Thus the interviews with the students and parents, as well as the teacher ratings, will, in part, serve as an external validation of the instruments. This further understanding of what certain of the items really meant to the students provides a more intensive, as well as extensive, picture of the motivations underlying their test behavior.

Thus, this aspect of the research project is intimately allied with every other part. Its reliance upon the theory-based cues, constructed by the inventory designers, is apparent The supplementary function served by this phase of the project will become clearer as the design is explored in Chapter Three.

Hypotheses

Since the ultimate purpose of the joint research project is the design of an objective measure of the factors characteristic of over- and under-achievers, the items used have been designed to so discriminate. The Null-Hypotheses of the creators of the Generalized Situational Choice Inventory, the Perceived Parental Attitudes Inventory, the Human Trait Inventory, and the Word Rating List are the same:

> There is no significant difference between the responses of over- and under-achievers on theory-based cues.

In this phase of the project, the factors which served as the theoretical bases for the instrumental cues are investigated again. The hypothesis, stated directionally, will be:

> There is a difference, in the predicted direction, between over- and under-achievers in the theoretical factors defined in this study.

Parent responses to the Perceived Parental Attitudes Inventory, and teacher responses to the Word Rating List were also solicited. It is hypothesized that:

1. There is a positive relationship between the responses of the sample of over- and under-achievers and their parents on the items (from the Perceived Parental Attitudes Inventory) finally selected for inclusion in the objective instrument designed to measure academic achievement motivation.

2. There is a positive relationship between the direction of the responses made by the parents of the over-and under-achievers, and the direction of the responses made by the criterion groups of over- and under-achievers respectively.

3. There is a positive relationship between the responses of the sample of over- and under- achievers and their teachers

on the items (from the Word Rating List) finally selected for inclusion in the objective instrument designed to measure academic achievement motivation.

4. There is an positive relationship between the direction of the responses made by the teachers of over- and under-achievers, and the direction of the responses made by the criterion groups of over- and under-achievers, respectively.

In the preceding paragraphs a general description of the rationale of the Farquhar Motivation Study has been given. A description of the instruments designed to objectively measure motivational factors themselves, has been presented. Finally, the place of the semi-structured interview for depth-analysis, in the total study, has been delineated.

In the next chapter, a review of the literature will emphasize the developmental character of these familial and personality factors.

The third chapter contains a description of the method by which the pertinent interview data was collected. Questions asked by the interviewer, and their relationships with the theorized motivational factors will be explained. A description of the method of sample selection is included in this chapter, also.

Chapter IV contains an analysis of the data, an examination of the stated hypotheses in the light of this data, and a discussion of the findings.

A summary of the purpose of the total study, and the part covered by this investigation will be presented in the final chapter. In addition to these points some conclusions, which might prompt

further research, will be offered.

CHAPTER II

REVIEW OF THE LITERATURE

Recent emphasis in educational research reflects an attempt to relate non-intellectual or personality factors to academic achievement. Certain of these have yielded promising results. It is from these studies that the theoretical structure, upon which this present research is based, has been derived. Many of the samples used by the several investigators, whose projects will be reviewed in this chapter, were taken from elementary school populations and college student bodies. Their findings are valuable since the traits discovered in the elementary group are the genesis of those to be found in the eleventh grade sample used in this study, and the college group characteristics are but mature manifestations of those which serve to identify the high school students. It is to be admitted that the college group is more select, and their environment more academically mature than in the eleventh grade. Yet to say that the over- and under-achieving college students, principally freshmen just a few months removed from the secondary school, are motivated by different forces would be to negate the accumulated evidence. For example, Shaw and Brown[1] have observed that the phenomenon of underachievement is not one which starts with college, but rather is a situation which was characteristic of most of these students throughout their high school courses.

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[1]Merville C. Shaw, Donald J. Brown, "Scholastic Underachievement of Bright College Students", Personnel and Guidance Journal, Vol. 36, November 1957, 195-199.

This developmental pattern in the maturing of n-Achievement is summarized by Rosen and D'Andrade[2]:

> "The cycle begins with the parents imposing standards of excellence upon a task and setting a high goal for the boy to achieve. As the boy engages in the task, they reinforce acceptable behavior by expressions of warmth (both parents) or by evidences of disapproval (primarily mother). The boy's performance improves, in part because of previous experience and in part because of the greater concern shown by his parents and expressed through affective reaction to his performance and greater attention to his training. With improved performance, the parents grant the boy greater autonomy and interfere less with his performance (primarily father). Goals are then reset at a higher level and the cycle continues."

Because of this developmental factor, as well as the nature of populations studied, this review of literature will be divided into two principal parts, each with three sub-divisions. Attention will be given to studies which use male samples, because in this study high school boys will be used as interview subjects.

1. Parent-child relationships and their role in the development of the achievment motive.
    a. Studies on elementary school subjects.
    b. Studies using high school subjects.
    c. Studies based on college subjects.
2. Personality characteristics of under- and over-achievers.
    a. Studies on elementary school subjects.

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[2]Bernard C. Rosen, Roy D'Andrade, "The Psychological Origins of Achievement Motivation", Sociometry, Vol. 22, No. 3., September 1959, 185-218.

b. Studies using high school subjects.

c. Studies based on college subjects.

Personality sketches of the over-and under-achiever will be presented at the end of the chapter. These word portraits will incorporate the principal characteristics found in the research articles.

Parent - Child Relationships

Studies on Elementary School Subjects

One of the principal studies made on elementary children is that of Winterbottom[3]. She emphasizes the role of the mother in the independence training of her son. The mother's attitude toward independence training was obtained from a questionnaire given to her in an interview. The core of the questionnaire consisted of a list of tasks or abilities which the child should have mastered by the age of seven and below or by the age of eight and above. She discovered that by age seven, the mothers of sons with high n-Achievement expect that over 60 per cent of the demands checked will have been learned. Also, the mothers of the "highs" tend to cease making restrictions on their sons at age eight while the mothers of the "lows" increase their restrictions. The picture here is of a "high" parent who urges her child to master a skill early (e.g. "to know his way around a city"), restricts him until he does (e.g. "not to play away from home"), and then lets him alone. In short, McClelland[4] says of the Winterbottom conclusions: "She has

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[3]M. Winterbottom, "The Relationship of Childhood Training in Independence to Achievement Motivation", Ph.D. Dissertation, University of Michigan, 1953.

[4]D. McClelland, J. Atkinson, et.al., The Achievement Motive, Appleton-Century-Crofts, New York, 1953, p. 303.

faith in her son's ability to master something and do it on his own, whereas the mother of a son with low n-Achievement tends not to have that faith and to continue restricting her child to playing around the house."

Summarizing Winterbottom's findings with regard to the role of the mother of the over-achiever, the following observations are listed:

1. The mother wants the child to do well in competition.
2. She wants her son to make his own decisions.
3. She wants her son to have interests of his own.
4. Her son must be energetic and active.
5. She wants him to do well in school and to show pride in his ability.
6. She wants her son to be a leader and to make his own friends.
7. She wants him to try difficult tasks for himself.
8. He should stand up for his own rights with others.

Rosen and D'Andrade[5], after studying a group of boys aged 9 to 11 as well as their parents, have added a few new dimensions to the portrait of the over-achiever and his relations with his parents. The observations were made on parent-child relationships and interaction in problem-solving situations that were standardized for all groups and required no special competence associated with age or sex. Their work closely follows that of McClelland. They distinguish between the types of child-training practices implicit in his theory. The first is that the child is trained to do things "well"; the second, the notion

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[5]Rosen and D'Andrade, op. cit.

that he is trained to perform tasks "by himself." The former has been called achievement training, the second independence training. In associations with parental demands that the child be self-reliant, autonomous, and show evidence of high achievement, there must be sanctions to see that these demands are fulfilled. This latter facet is unique to Rosen and D'Andrade.

> "Parents of a boy with high n-Achievement," observe Rosen and D'Andrade[6], "tend to have higher aspirations for him to do well at any given task, and they seem to have a higher regard for his competence in problem-solving. They set up standards of excellence for the boy even when none is given, or if a standard is given, will expect him to do 'better than average.' As he progresses they tend to react to his performance with warmth and approval, or, in the case of the mother especially, with disapproval if he performs poorly. In a way it is this factor of involvement that most clearly sets the mothers of high n-Achievement boys apart from the mothers of low n-Achievement boys."

The former give less specific directions of what to do in the various experimental tasks, yet they give their sons less option about doing something and doing it well. Observers report that the mothers of high n-Achieving boys tend to be striving, competent persons. Apparently they expect their sons to be the same.

These researchers also observed that the mother-son relations are typically more secure that those between father and son, so that the boy is able better to accept higher levels of dominance and rejection from his mother than his father with adverse affect on his need to achieve. Relatively rejecting, dominating fathers, particularly

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[6]Rosen and D'Andrade, op. cit., p. 215.

those with less than average warmth - as tended to be the case with the fathers of low n-Achievement boys - seem to be a threat to the boy and a deterrent to the development of the achievement motive. On the other hand, above-average dominance and rejection, coupled with above-average warmth, as tends to be the case with mothers of high n-Achievement boys, appear to be a spur to achievement motivation. Fathers of high n-Achievement boys are on the average less rejecting, less pushing, and less dominant, all of which points to their general "hands-off" policy.

Hoffman, Rosen, and Lippitt[7], as a result of a survey of 211 third to sixth grade boys in Detroit elementary schools, have formulated three tentative hypotheses concerning parental coerciveness as a motivating force, and child autonomy as a facilitating agent in school success:

1. Boys who report high parental coerciveness will have needs for hostility outlets and self assertion.

2. Autonomy facilitates the effective expression of these needs in the peer group.

3. Probably due to the combination of these two effects, boys reporting high parental coerciveness and child autonomy are successfully assertive in school.

Haggard[8] also found traits of tenseness, competitiveness and aggression in his group of gifted boys in the laboratory school of the

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[7]L. W. Hoffman, S. Rosen, Lippitt, R., "Parental Coerciveness, Child Autonomy, and Child's Role at School", Sociometry, Vol. 23, March 1960, 15-21.

[8]Ernest A. Haggard, "Socialization, Personality and Academic Achievement in Gifted Children", School Review, Vol. 65, December 1957, 388-414.

University of Chicago. In spite of these traits, however, they related better with their parents, teachers and peers and showed a higher level of overall adjustment than did the low academic achievers. Walsh[9] describes her boys as expressing a feeling of belongingness with, and more freedom and adequacy of emotional expression to, parents.

Finally, Lewis[10], using the top 10 per cent in I.Q. from an original sample of 45,000 in grades 4 to 8 in 455 schools in 36 states, found the accelerated group rating higher in generosity, physical energy, dependability, originality, self-reliance, and investigativeness, than the retarded group. This last study serves to emphasize the positive aspects evident in the relationship of high achievers to those in their environment.

Studies Using High School Subjects

The dynamics of family relationships which exert an effect on the achievement of adolescents are, to a great extent, the same vectors that influenced their childhood strivings. However, factors such as the choice of a future occupation, and the heightened father-son contact pattern, are elements which tend to achieve greater importance in the high school years.

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[9]Ann M. Walsh, "Self-Concepts of Bright Boys with Learning Difficulties", Bureau of Publications, T. C. Columbia University, New York, 1956, 78pp.

[10]W. D. Lewis, "A Comparative Study of the Personalities, Interests, and Home Backgrounds of Gifted Children of Superior and Inferior Educational Achievement", Journal of Genetic Psychology, Vol. 59, 1941, 207-218.

Curtis and Nemzek[11] found a difference in achievement significant at the .01 level between their "normal" group of high school pupils, and those who lost their fathers by death, divorce or separation. Unemployment of the father, and his continuous presence in the house, produced similar results. Apparently the student's image of his father, probably a mean one since the father does not provide as other family heads do, affects his school work as much as having no father image. Kimball[12] discovered the presence of a poor father-son relationship resulting in much underlying aggression, seldom expressed even indirectly. She says that the pattern of a poor relationship with the father plus difficulty in openly expressing resentment toward him leads to a further conceptualization of the problem in terms of scholastic failure as an indirect expression of aggression toward the father. Very often the fathers are anxious for their sons to do well and are completely crushed when they do not succeed. Thus the end goal of the child's attitude toward school may be the punishment of a frustrating parent. In her sentence-completion technique Kimball[13] received responses such as the following:

1. Father is a drunkard.

2. The father has a very low-level job attributed to him.

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[11]E. Curtis, C. R. Nemzek, "The Relation of Certain Unsettled Home Conditions to Academic Success of High School Pupils", Journal of Social Psychology, Vol. 9, 1938, 419-435.

[12]Barbara Kimball, "Case Studies in Educational Failure During Adolescence", American Journal of Orthopsychiatry, Vol. 23, April 1953, 406-415.

[13]Barbara Kimball, "The Sentence-Completion Technique in a Study of Scholastic Underachievement", Journal of Consulting Psychology, Vol. 16, October 1952, 353-358.

3. Child avoids the father when he comes home.

4. Father is seen as a punishing agent.

5. Reference to father as aged.

High schools today, especially those staffed with trained guidance counselors, attempt to assist students in making wise vocational choices. A wise choice should certainly include a student's evaluation of his intellectual capacity as manifested in his present achievement, and assurance of future success. Ford's[14] data revealed that over- and under-achievers do not differ so much in the clarity or specificity of their aims as they do in their choices. Eighteen of the 24 over-achievers aspired to professional occupations, while only eight of 24 under-achievers so aspired. He writes, also, that about two-thirds of the over achievers reported that their parents wanted them to enter professions, while only one-fourth of underachievers reported in this fashion.

Armstrong's [15] group chose their future occupations because of the external influence of others. Their future vocational goals did not agree with their dominant interests as measured by the Kuder Preference Record - Vocational. Kurtz and Swenson[16] found that high vocational goals were characteristic of plus achievers. They relate their

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[14]Thomas R. Ford, "Social Factors Affecting Academic Performance: Further Evidence", School Review, Vol. 65, Winter 1957, 415-422.

[15]Marion E. Armstrong, V 15: 1349-50, 1955 Dissertation Abstracts, University of Connecticut.

[16]John J. Kurtz, Esther J. Swenson, "Factors Related to Over Achievement and Under Achievement in School", School Review, Vol. 59, November 1951, 472-480.

school work to future goals, and they regard education for more than its job value. The negative achievers, on the other hand, have limited and vague educational and vocational aims.

In addition to these newly evolving influences in the development of n-Achievement, the researchers in the high school area have discovered factors identical with those found using elementary school samples. In the Toronto schools study, conducted by Barrett[17], patterns in the homes of underachieving gifted students tended to be negative in tone. Parents held a neutral or uninterested view of education, coupled with an over-anxious, over-solicitous, and an easy-going or inconsistent attitude toward their child. A lack of cooperation in the family seemed evident, and often conflict ended with a domination of the child. The over-achieving boys seems to be in a more positive atmosphere according to Kurtz and Swenson[18]. These young people have parents who take pride in them, show them confidence, affection and interest. The boys in return respect their parents and take them into their confidence. They, unlike their under-achieving peers, are anxious to please their parents, and their parents return this respect.

Studies Based on College Subjects

Motivational patterns which originate in early child rearing practices, and which mature during the junior and senior high school years, usually manifest themselves dramatically in the more competitive

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[17]Henry O. Barrett, "An Intensive Study of 32 Gifted Children", Personnel and Guidance Journal, Vol. 36, November 1957, 192-194

[18]Kurtz and Swenson, op. cit.

and adult atmosphere of the college and university campus. It is in this educational arena that the traits which contribute to academic success receive their ultimate test. The files of college counseling centers are replete with cases of students who, though possessing adequate ability, do not succeed in the academic forum. They seem to be possessed by what Brown[19] calls "activity delay." They lack decisiveness of action, they demonstrate a tendency to procrastinate, and often this is coupled with an unwillingness to conform to sensible academic requirements, routine, and regulations. This study by Brown points toward the assumption that the poor scholastic student does not necessarily score lower on psychological tests designed to measure intelligence, but that very often factors such as lack of interest and motivation are primary deterrents to academic success.

McClelland[20] observes that the way sons with high n-Achievement perceive their parents varies from high school to college and cannot be taken as a very reliable index of how parents actually behaved toward them. He argues that since the high school subjects come from lower socio-economic backgrounds, more of them may have been subjected to a degree of rejection or neglect which is relatively unknown among families from which college students come. Thus a rating of "unfriendly" for a high school student may mean behavior which is objectively much more unfriendly than what the college student means by

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[19]William F. Brown, Norman Abeles, Ira Iscoe, "Motivational Differences Between High and Low Scholarship College Students", Journal of Psychology, Vol. 45, April 1954, 215-223.

[20]McClelland, op. cit.

"unfriendly". With this hypothesis in mind McClelland[21] presents his gathered data on college males. "College males who give evidence of being very close to their parents in their admiration of them and perception of them as particularly loving and helpful do not for the most part score high on n-Achievement. On the contrary, it is the students who see their parents as 'distant' - unfriendly, severe, unsuccessful - who have high n-Achievement scores." This striking reversal of the picture drawn by the high school sample is a phenomenon deserving of further exploration.

One possible additional explanation of the above data is provided by McClelland himself[22]. This hypothesis is stated in terms of the son's perception of his parent's behavior not in terms of actual differences in behavior. The college student, unlike the high school boy who is younger, more in need of help, and still living at home, is away from home, attempting to become independent. If he has high n-Achievement, he may regard any attempt by the parents to aid him as an unfriendly, interfering act. Because he is trying to break away from his parents, he may view them in a rather hostile light, whereas earlier, he might have viewed them more favorably for exactly the same behavior.

The majority of college studies on over- and under-achievement center around the measurement of study habits and attitudes, aptitudes and achievement backgrounds, and personality factors contributing

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[21]McClelland, op. cit., p. 281

[22]McClelland, op. cit.

to success or the lack of it. These research findings will be discussed later in this chapter.

Personality Characteristics of Under and Over-Achievers

The complex and various human traits subsumed under the term "personality" exert their forces on, and are externally manifested in, behavior patterns. It is during the period of adolescence, especially in the ages covered by this study, that these forces often act in the manner of opposing vectors pulling the high school student in a direction which is the resultant of these forces. It is thus vastly important for those who help shape the future of these adolescents to have an understanding of these human traits.

Stagner[23] remarks that the "personality" influences achievement in an indirect way by affecting the degree to which use is made of the individual's potentialities. Woodruff[24] encourages research in this direction when he observed that "the profitable field in motivation is the measurement of ideas and their affective attachments, and the relation of these to the needs felt by the individual." Fliegler[25] feels that the consistently threatening environment in which an under-achiever finds himself, may lead to a partial disintegration of the personality.

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[23]R. Stagner, "The Relation of Personality to Academic Aptitude and Achievement", Journal of Educational Research, Vol. 26, 1933, 648-660

[24]A. D. Woodruff, "Motivation Theory and Educational Practice", Journal of Educational Psychology, Vol. 40, 1949, 33-40

[25]Louis A Fliegler, "Understanding the Underachieving Gifted Child", Psychological Reports, Vol. 3, December 1957, 533-536

"Hence," he says, "it is not too presumptuous to postulate that the under-achiever is a maladjusted youngster."

What are some of these dynamic forces which affect motivation? We have just reviewed some of the most pertinent findings in the environment of the student. But just as Kimball[26] found it necessary to study the interaction between the personality and the environment, we will present some of the principal studies dealing with personality traits of over- and under-achievers

Studies on Elementary School Subjects

Studies on the parent-child relationships of elementary school children, quoted earlier, usually incorporate some tentative statements concerning the personality traits which develop as a result of these relationships. Ann Walsh[27], in her work with bright young boys engaged in doll play, presents some penetrating hypotheses concerning the emotional, attitudinal, and motivational forces acting on the youthful adequate and under-achievers. A Driscoll Playkit was used for the observations, and the identification of the boy with the boy-doll especially scrutinized. Some of the findings, pertinent to our study, can be summarized:

1. Boys with adequate achievement saw themselves as free to make choices, and to initiate activities. The low achievers depicted the boy-doll as restricted, hemmed-in, helpless. (Significant at the .01 level)

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[26] Kimball, "Case Studies.....", op. cit

[27] Walsh, op. cit.

2. Those who were achieving in an adequate fashion portrayed the boy-doll as conveying his emotions directly to the parent-dolls, whereas the other group expressed an exaggerated, free-floating emotion. (Significant at the .01 level)

3. Low achievers perceived themselves as punished, criticized, rejected, and isolated. (Significant at the .05 level)

4. Adequate achievers placed the boy-doll in a series of constructive, purposive, and resourceful activities. Whereas, the low achievers put him in situations where he acted in a defensive manner, either through compliance, evasion or escape, or blind rebellion. (Significant at the .01 level)

Lewis[28] mentions similar characteristics. The retarded segment of the sample did not measure up to the accelerated group in such traits as dependability, originality, self-reliance, investigativeness, generosity, and physical energy. Haggard[29] found the high and low achieving youngsters in the Chicago lab school as differing in emotional control, organization and integration of experiences, ideas and feelings, with the nod given in favor of the high achievers. In his longitudinal study he noted certain changes occuring as the children grew By grade 7 a marked increase in the anxiety level of high achievers was apparent, this coupled with a decrease in their intellectual originality and creativity. They also became more aggressive, persistent, hard driving, and competitive, and they showed signs of willingness to be aggressive and destructive in order to defeat and win over others. Yet they were more respectful and liked by their peers, and emerged as their leaders.

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[28]Lewis, op. cit.

[29]Haggard, op. cit

These observed characteristics are the genesis of the more maturing emotional behaviors of the adolescent and young adult. A study of some of the more significant investigations using high school groups will illustrate this developmental process

Studies Using High School Subjects

That the secondary school years are characterized by emotional ambivalence is an acknowledged psychological phenomenon. The young boy, especially, has placed before him by his culture a decision pertaining to his future. His perception of what this future holds for him acts as a strong impetus to achieve academically, or to regard school as an obligation to be cast off as soon as the law or family permits. The personality traits, which have been developing throughout the early school years, now exert their influence on the student in his process of decision.

Kimball[30] finds the educational failures in a private prep school for boys to be possessed by much underlying aggression, strong feelings of inferiority, passivity, and strong dependency needs. These boys feel that they cannot continue in an educational type of competition. Many of them have tried to succeed, but when only failure resulted from their efforts they give up. For them a failure after such honest effort is more anxiety-producing than failure due to lack of effort, so they do not try. Thus teacher ratings of underachievers tend to be negative in the areas of cooperation, dependability and

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[30]Kimball, op. cit.

judgment[31]

Tiebout[32] presents an interesting facet of the self-concept of the over- and under-achiever He found that the low scholarship student habitually rationalized or ignored his failures, and exaggerated or distorted his successes in order to maintain a favorable impression of himself. He concludes, from his investigations, that one major difference between high and low scholarship students might be a motivational orientation toward facade. Such an orientation might be conceived as a readiness or willingness to resort to facade in situations where self interest dictates that one make a favorable impression. Brown and Abeles[33] corroborate this contention. Presuming a facade orientation continuum, they found that the high and low scholarship students are characterized by conservatism or liberalism, respectively, in the use of facade.

Further factors relating to over-achieving and under-achieving in school are supplied by Kurtz and Swenson[34]. Students who are achieving tend to associate with those whose standards are also high, whereas the underachiever chooses his companions from among those with unfavorable attitudes toward school. The positive achievers are, as

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[31]Armstrong, op. cit.

[32]H. M Tiebout, "The Misnamed Lazy Student", Educational Research, 1943, 113-129

[33]W F. Brown, N. Abeles, "Facade Orientation and Academic Achievement", Personnel and Guidance Journal, Vol. 39, December 1960, 283-286.

[34]Kurtz and Swenson, op cit.

a consequence, happier in the classroom situation and they derive satisfaction from books. Their future is linked with their present endeavors, whereas the negative achievers have only limited and vague educational and vocational aims. This general favorable approach to education on the part of achievers enables them to assume positions of leadership, and to develop such qualities as originality, and self confidence. Their counterparts are, in turn, unhappy, and lacking in confidence. Gowan[35] seconds much of this, adding that he would describe the over-achiever as having an enthusiastic, socialized, activity-oriented view of life. The under-achiever, on the other hand, is characterized by apathetic withdrawal from the rewarding aspects of school life.

Studies Based on College Subjects

A tendency to associate both over- and under achievement with some degree of personality maladjustment is evinced by several investigators. Hoyt and Norman[36] demonstrated that differentially accurate achievement predictions can be made for students classified by "personality adjustment." They have thus provided some statistical support to the position that personality characteristics play an important role in academic achievement. In collegiate communities where professional counseling services are available, the effect of

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[35]John C Gowan, "Dynamics of the Underachievement of Gifted Students", Exceptional Children, Vol. 24, November 1957, 98-101.

[36]Donald P. Hoyt, Warren T. Norman, "Adjustment and Academic Predictability", Journal of Counseling Psychology, Vol. 1, Summer 1954, 96-99

personality disturbances on academic progress is attested to by therapists Hackett's[37] low achieving college males seemed to lack warmth and an acceptance of other people Projection seemed to be a defense mechanism of great usefulness to this group. The high achieving group, on the other hand, seemed to project less, discriminate better and to be emotionally less easily aroused. They appeared to tolerate tension much better and to live at a more relaxed, confident tempo.

Mitchell[38] presents some interesting contrasts between the extremes on the achievement continuum. Over-achievers are characterized as having feelings of unworthiness as being over-compensators, and as obtaining their ego satisfaction through academic work The underachiever lacks motivation, demonstrate defensive behavior, and fulfills his ego needs in areas other than the academic one. This bright picture of the over-achiever and gloomy portrait of the underachiever receive additional coloring by Morgan[39]. The former are optimistic, persuasive, dependable, responsible, serious, energetic, self-confident, and exhibit an awareness of and concern for other persons. The latter,

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[37]Herbert R Hackett, 'Use of MMPI Items to Predict College Achievement", Personnel and Guidance Journal, Vol 39, November 1960, 215-217

[38]James V Mitchell, "Goal-Setting Behavior As a Function of Self-Acceptance, Over and Under Achievement, and Related Personality Variables", Journal of Educational Psychology, Vol. 50, June 1959, 93-104.

[39]Henry H. Morgan, "A Psychometric Comparison of Achieving and Non-Achieving College Students of High Ability", Journal of Consulting Psychology, Vol. 16, 1952, 292-298

says Horrall[40], exhibit conflict over conduct, have feelings of inadequacy, and a greater concern about health

Several researchers have provided more concrete and measureable factors as bases for academic achievement. These factors are based, primarily, on the presence or absence of certain study habits and skills. These techniques, however, are but the external manifestations of the underlying dynamics described above.

Summary

An attempt has been made to present certain conclusions pertaining to the personality and environmental characteristics of the over- and under-achieving male student. The developmental aspects have been stressed to show that the influences playing on the high school junior in the sample of this dissertation, are not altogether peculiar to him at this stage of his scholastic career. Vectors influencing his choices have already received their direction in his early training, and they will continue to exert their force as he progresses. In the case of both the under- and over-achiever the teacher and counselor will better assist them if they have an understanding of the dynamics which motivate these students in their separate directions.

The Picture painted of the underachiever may be briefly summarized. The basic characteristics underlying his personality seem to be deep

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[40]B. M. Horrall, "Academic Performance and Personality Adjustments of Highly Intelligent College Students", Genetic Psychology Monographs, Vol. 55, February 1957, 3-83.

feelings of conflict, hostility, and aggression. His free-floating anxiety tends to demoralize him and decreases his ability to be academically successful. He demonstrates hostility toward authority figures and is resistant to externally imposed tasks either from parents or peers. The underachieving boy feels inferior to his father, who tends to dominate him, and has much conflict with his mother. His sexual, and other interpersonal relationships, suffer because of his inability to conform to social standards. So much of his energy is dissipated in these anxiety producing contacts that he has little left for academic pursuits.

Like the underachiever, the over-achiever seems to have some amount of anxiety, aggression, and dependency characteristics. He, however, is able to control his anxiety and make it work for him as a driving force toward academic excellence. The successful student has more self-control, is more socially acceptable, and has good peer relationships He does not look upon his father as a threat, and his respect for his parents is reciprocated. With the absence of the anxiety laden drives of his academic opposite, he is able to progress in a healthy and successful path.

CHAPTER III

DESIGN AND METHODOLOGY

Definition of the Population

The various motivational indices designed for this research project were administered to eleventh grade students. However, the process of selection of these students began when they were sophomores. At that time a survey was made of the current testing programs in the 100 most populous cities of the state. Some of these schools had administered the Differential Aptitude Test as part of their ninth grade testing programs, and consequently had scores from this instrument for each of their sophomore enrollees. The nine largest of these schools were invited to participate in the research investigation. All nine schools agreed to cooperate.

In order to select the preliminary sample, from which the final group of over- and under-achievers would be chosen, it was deemed necessary to use a second measure of scholastic aptitude. The Language section of the California Test of Mental Maturity - Short Form was then administered to the sophomores in each of the participating schools who did not have the results of this test on file. The group of students for whom both test scores were available numbered approximately 4200.

Only individuals who were stable with respect to measured scholastic aptitude, over a one year period, were marked for the second step in the sample selection. To determine the stability desired, a regression technique was developed. After empirically examining the

relationships of DAT and CTMM sub-test scores to grade point average, the DAT - Verbal Reasoning and CTMM-Language sub-test were selected as the most stable estimates of academic aptitude. These two sub-tests were found to be the best individual predictors from among the various tests used: DAT Verbal Reasoning, Numerical Ability, and Abstract Reasoning; and the CTMM Language and Non-Language.

The correlation between these two sets of test scores was then found. A regression equation was also formulated by using one sub-test to predict scores on the other. Regression equations were calculated for each school and sex, inasmuch as a pilot study indicated that one equation would not make the best prediction if used from school to school.

Farquhar[1] describes the procedure by which the over- and under-achievers were finally identified. The regression of CTMM-L and DAT-VR, as well as the reverse regression of DAT-VR and CTMM-L were obtained. This resulted in two regression lines crossing each other in the form of an "X". A third regression line was constructed between these two aptitude predictors assuming a correlation of +1.00 between the two variables. Standard errors of estimate were computed for both regression lines. These error lines also made "X" configurations, and lines bisecting these "X's" were drawn. These bisectors indicate an average of the two crossing standard error of estimate lines (See Figure 1).

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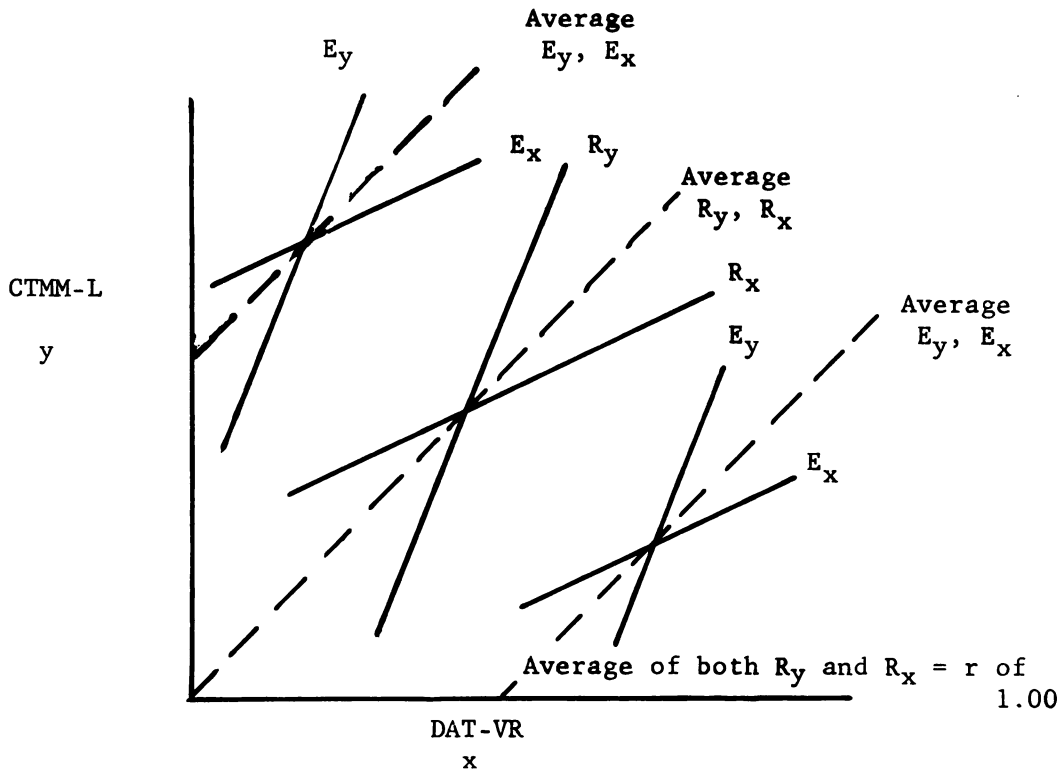
[1]William W. Farquhar, "A Comparison of Techniques Used in Selecting Under- and Over-Achievers", Michigan State University, 1961.

Figure 1

Regression Lines and Standard Errors of Estimate

for the Prediction of CTMM-L Scores from DAT-VR Scores

and DAT-VR Scores from CTMM-L Scores



R_y = regression of y on x

R_x = regression of x on y

E_y = standard error of estimate limits of $\pm$ 1.00 of R_y

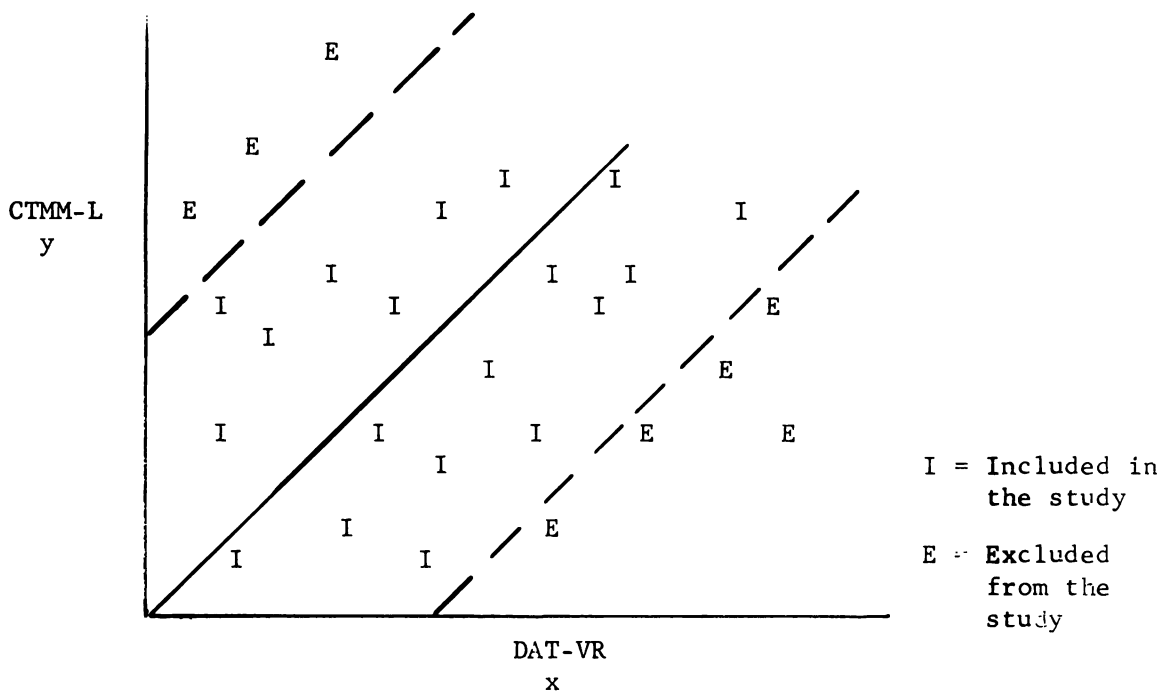
E_x = standard error of estimate limits of $\pm$ 1.00 of R_x

---- = dotted line drawn to indicate average of the two crossing lines.

Individuals who fell within plus and minus one standard error of estimate about these average regression lines were included in the study (See Figure 2).

Figure 2

Students for Whom a Stable and Reliable Estimates of Ability was Found



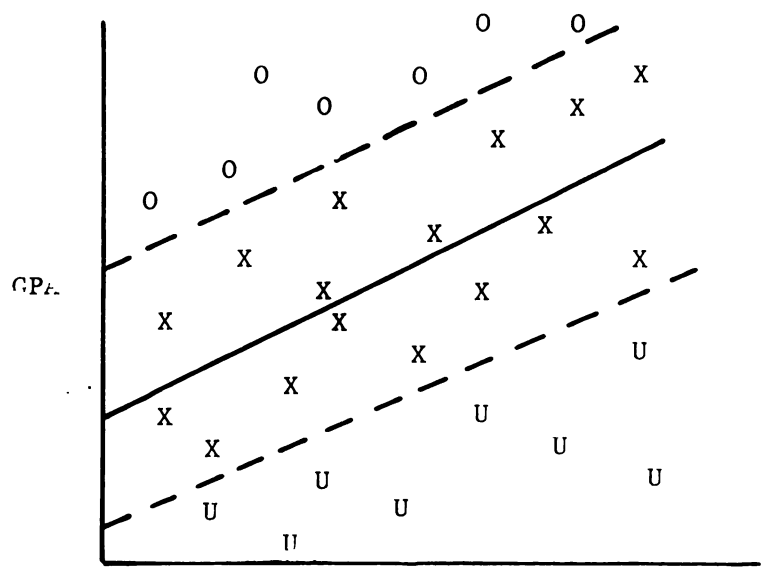
By choosing only those individuals falling within ±1.00 standard error of estimate, emphasis was placed on avoiding a Type II error (accepting a student when he should have been rejected) Each of the sub-tests mentioned above were correlated with Grade Point Average. The DAT-VR produced the highest correlation with this measure of achievement. With this group of subjects, therefore, regression equations

predicting Grade Point Average from DAT-VR were formulated For all groups r increased indicating that part of the spurious error had been reduced. Regression equations were determined separately for males and females in each of the participating schools. Standard errors of estimate were computed for each regression equation, and students falling outside these limits were labeled over- or under-achievers. See Figure 3.

Figure 3

Regression Identification of the

Over- and Under-Achievers



This procedure resulted in approximately 12% of the original sample of 4200 being classified in one of the extreme groups, over- or

under-achievers.

Description of the Sample

As a result of the statistical procedure just described, a group of over-achieving males and a group of under-achieving males were identified for each school. The term over-achiever, in this study, is defined empirically. It is a student whose grade point average is higher than the average predicted for him when the regression equation (which predicts GPA from DAT-VR scores) is used. In like manner, the under-achiever is one whose GPA is lower than the predicted average.

Only three of the schools were chosen to participate in the phase of the research project from which this dissertation results. The list of over- and under-achieving boys was constructed for each school. In addition to the student's name the following information was gathered.

1. His raw score and ninth grade percentile ranking (National Norms) on the Differential Aptitude Test - Form A Verbal Reasoning.
2. His deviation from the predicted grade point average. This deviation is positive for over-achievers, and negative for under-achievers.

In order to obtain students from the full range on academic aptitude, the DAT-VR percentiles were divided into quintiles. From the groups, in each quintile, the one over-achieving boy who deviated most from the predicted GPA, and the one under-achieving boy who deviated most, were chosen to constitute the total sample of ten. See Table III.

Table III

Distribution of the Sample By Ability Level

Indicating Achievement Discrepancy

	Quintile I	II	III	IV	V
Over Achiever	+.96*	+ 75	+.92	+ 91	+.90
Under Achiever	-.15	- 40	- 70	-.30	-.32

*This individual's actual GPA was .96 points higher than that predicted for him on the basis of the regression equation.

Other requirements to be met by the sample included:

1. Complete answer sheets for each inventory
2. A Personal Data Questionnaire which was completely and accurately filled in.
3. Intact families, i.e. mother and father both alive and living together.
4. Each boy in the sample must have indicated:
   a. one present teacher who knows him best.
   b. One past teacher who knew him best.
5. The student be presently attending school as a member of the eleventh grade.

To obtain all needed information, concerning the individuals in the sample, it was necessary to interview their parents. The Principal in each school contacted the family and requested permission for an interview. The interviewer called the homes to confirm the request, as

well as to explain the purpose of the interview. All the parents who were contacted accepted the invitation.

The Design of the Study

In the previous chapters some of the theoretical factors influencing academic achievement were described, and some hypotheses concerning their dynamics were formulated. It remains, now, to explore them through personal contact with the subject whose personality they mold.

The design of this study is directed toward the use of a semi-structured interview for depth exploration. The interview is not intended to be a therapeutic session. Consideration was given to the fact that the interviewer was a stranger to the student, and in no way connected with the regular counseling program of the school. This role may occasion some reticence on the part of the interviewee; but it may also invite some perceptions and statements which would not be made to a counselor who is to remain a part of the school scene. Questions of a personal nature were excluded from the series of queries directed to the student. Yet, if the boy presented some aspect of his personality or behavior patterns which the interviewer felt he could explore without encountering resistance, he did so.

This study, and consequently its design, has two purposes:

1. To provide some further validation of the hypotheses stated by Payne[2] and Taylor[3], as well as those of McClelland and Thorpe.
2. To develop new approaches to the understanding of the need for academic achievement.

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[2]Payne, op. cit.

[3]Taylor, op. cit.

Instrumentation and Collection of Data

To achieve these ends, a combination of inventory data and interviews was used. Each of the principal agents in the socialization process was included: the student, his parents, and his teachers.

The Student

Each of the boys in the sample, five over-achievers and five under-achievers, were interviewed twice. The interviews were held on consecutive days and recorded. The students did not know the purpose of the talks in advance. In fact, only four of the ten had received previous notice from the Principal's office. The others were called from class or study hall.

The explanation given to the students, their parents, and teachers consisted of a simple statement of purpose: "We are interested in finding ways of helping students to do their best in school. By talking to the boys, their parents, and teachers we hope to discover some means of achieving this objective." At no time were the parents, teachers or students told that the boy was an over or under achiever. The terms over and under achiever were never brought up in any of the interviews.

A list of questions was prepared. Each question was asked of all the boys, but not necessarily in the same order in every case. If the response to one query seemed to offer a logical opening for another, that statement was presented to the interviewee The majority of the questions were designed to explore certain of the factors hypothesized

by McClelland[4], and Taylor[5]. Some questions and tasks were offered on an exploratory basis, with the hopes that their use might open some new approaches to the study of achievement motivation. These new ideas will be discussed, more in detail, in the next two chapters.

1. Long term involvement:
   a. What are your plans for the future?
   b. How long have you been thinking about this future?
   c. What do students do?
   d. Who are you?
   e. If you could do anything you wanted to, what would it be?
2. Unique accomplishment:
   a Why do you want this future?
   b. What do you expect to accomplish?
   c. What do students do?
   d. How do you feel when you have succeeded in something you consider worthwhile? Can you give an example?
   e. If you could do anything you wanted to, what would it be?
   f. What was your most enjoyable experience in high school?
   g. Why do you participate in activities in or out of school?
3. Competing with standards:
   a. How do you expect to accomplish your plans for the future?
   b. What persons or groups do you expect will figure in your plans? Why?
   c What do students do?

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[4]McClelland, op. cit.

[5]Taylor, op. cit.

d. If school were just the way you wanted it to be....how would it be?

e. If you could do anything you wanted to, what would it be?

f. How do you feel during examination time?

g. Why do you participate in activities?

h. Why do we have schools?

The above factors are those of McClelland, the following are presented by Taylor.

1. Free-floating -- Controlled Anxiety:

   a. How do you feel during examination times?

   b. How do you feel you are progressing toward your future goal?

   c. How do you feel when you have failed in something you consider worthwhile?

   d. Do you think you will get the help you need to reach your goal?

2. Hostility toward authority -- Good authority relationships:

   a. What do students do?

   b. How do teachers feel about students?

   c. Name the people who are most important to you.

3. Dependence -- Independence:

   a. What persons or groups do you expect will figure in your plans for the future? Why?

   b. If you had a choice to live with one person, who would it be? Why?

   c. Is there anyone who inspired you to choose your goal?

   d. What kind of help do you need to achieve your goal?

   e. Who is important to you? Why?

4. Socially oriented -- Academically oriented:

   a. What do students do?

   b. If school were just the way you wanted it to be, how would it be?

   c. In what activities do you engage?

   d. Describe your relationships with girls?

   e What was your most enjoyable experience in high school? Elementary school?

   f. What was your least enjoyable experience in high school? Elementary school?

   g Why do we have schools?

   h. What do you look forward to when you come to school in the morning?

5. Inadequate interpersonal relationships -- Adequate interpersonal relationships:

   a. Who are you?

   b. Describe your relationship with girls.

   c. In what activities do you engage?

   d. Who are the persons who will figure in your plans for the future.

   e. How do you expect to accomplish your goal?

   f What type of help do you think you will need to accomplish your goal? Will you get it?

Several of the questions occasioned answers which supplied insights into more than one of the eight factors listed above. Whenever a student reply invited a deeper questing, such exploration was made. It was in these moments, when the student was most candid and insightful, that much of his motivational structure might be revealed.

In order to explore several factors in interaction with each other, a few tasks were inserted into the interviews In one of these

the student was presented with this assignment: "Your English teacher assigns a project to be handed in anytime during the coming semester. She does not tell you what form to use, how long it should be, what references to use. She merely designates the title: 'Communism in the World Today' How would you go about completing this assignment?" The boys were asked to illustrate their procedure by drawing on their past experiences with similar projects. Such factors in the student's life as long term involvement, unique accomplishment, competing with a standard, anxiety, and independence could be explored by the use of such a technique.

At the close of the first interview the boy was asked to work several configurations in the block design sub-test of the Wechsler Adult Intelligence Scale (WAIS). The first two designs were assembled by the interviewer, then by the student. The remaining assemblies (Number 3, 6, 9, 10) were left almost entirely to the student; no time limits were imposed. While he worked on the blocks, the student was observed for method of approach, signs of frustration or impatience, and outward expressions of some sudden insight into the method to be used in completing the task. After each design the student was asked to describe the process by which he arrived at a successful solution Free-floating anxiety or controlled anxiety as well as the dependence-independence factors could be dramatized here. When the student appeared to reach a limit in his perception of the task, or when he began to become impatient with himself, the interviewer would present a hint

which might aid in leading to a solving of the problem.

A series of pictures, the Nest, a part of the Picture Arrangement sub-test of the WAIS, was used as a conclusion to the second interview. Three other series were then presented, #4 Louie, #7 Fish, and #8 Taxi. Again no time limit was imposed. At the completion of each arrangement, whether correct or incorrect, the student was asked to recite the story told by the pictures. Factors similar to those acting in the block design might be functioning here.

Finally, another hypothetical situation was created for the boy. He was asked to describe how he would go about performing a dangerous assignment provided he had use of men and equipment to see it to a successful conclusion. Such factors as competing with standards, unique accomplishment, adequate interpersonal relationships, and independence, as well as the opposite ends of these continua, could be interacting in such a situation.

Several months preceding these interviews the juniors in the nine participating schools were administered the battery of motivational instruments described in Chapter I. The items, from these inventories, which provided the best discrimination between over- and under-achievers in the population were isolated by Payne, Taylor, Thorpe, and others. From these statements and their corresponding responses, the following were selected as pertinent to this study:

1. The 59 most discriminating items on the Perceived Parental Attitude Inventory (significant at the .10 level using the validation group described by Payne[6]). From the above 59

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[6]Payne, op. cit.

items the 14 which remained after being tested for significance (at the .10 level) on Payne's cross-validation group, were compared with corresponding responses made on the same items by the parents of the sample, as well as the responses made by the sample itself.

2. Significant items from the Word Rating List were also used. The responses of the boys in the sample were compared with the responses made on the same items by their present teachers

The Parents

The Principals of the three schools selected for this investigation notified the parents of the ten boys that their cooperation in the project would be appreciated. Fathers and mothers were interviewed together in their homes. Interviews were partially structured, but the parents could express themselves freely on all topics In addition to the several questions asked, the parents were requested to respond, together, to the 59 significant items selected from the Perceived Parental Attitude Inventory (PPAI). Whenever a pronounced difference in response appeared, the parents were asked to reach a decision which would most likely be reached were the situation to actually occur in their family. The parental comments, interpretations, and modifications were recorded.

It is, of course, necessary to relate the material gathered in the parental interviews to the factors described by Payne[7], and summarized in Chapter I.

1. Achievement Pressure Factor:

   a Why is education important for your son?

   b. How would you characterize your son's work in school?

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[7]Payne, op. cit

c. What goals do you have for your son?

d. Do you feel that high school students are working up to their abilities?

e. In Appendix A, the 59 significant items from the PPAI are duplicated. From this group, items 1, 34, 137, and 145 seem pertinent to this factor.

2. Permissiveness Factor:

a. What role should a high school boy play in decision making concerning: his own future; management of the home; types of companions; and types of entertainment?

b. What role does your son play?

c. Many items in the PPAI touch on this factor Among them the following were used here: 14, 24, 32, 34, 37, 53, 62, 76, 94, 111, 116, 124, 133, 140

3. Possessiveness Factor:

a. The question concerning the boy's role in decision making applies here, also.

b. Others, from the PPAI, include numbers 11, 14, 32, 37, 53, 60, 94, 113, 116, 124, 150.

4. Democratic Guidance Factor:

a. This particular factor was well explored by means of a follow-through on responses given to some of the structured questions described above. The questions centered around the parents' attitudes and behavior with regard to their son's decisions relative to vacations, companions, future career, and choosing his own type of entertainment.

b. Questions from the PPAI include numbers 44, 59, 76, 133.

5. Discipline Factor:

a. What is your idea of disobedience?

b. What type of discipline should be used? Why? Is it effective?

c. Items from the PPAI: 8, 11, 76, 91, 95, 140.

6. Rejection-Ignoring Factor:

   a. The general tenor of the remarks made by the parents gave several clues as to the strength of this factor.

   b. Items such as numbers 2, 83, 106, and 115 also measure this factor

7. Parent-Child Interaction Factor:

   a. This factor includes the previous questions and the given responses. The degree of acceptance, by the parents, of their parental role, seemed amply illustrated by their comments during the interviews.

   b The PPAI includes such situations as described in items 19, 25, 78, 83, 101, 102, 103, 131, 142, and 147. Each of these cues give the parents an opportunity of expressing the dynamics existing in their relations with their children.

The Teacher

In the Word Rating List each student in the population previously defined was asked to rate himself on certain adjectives as he perceived his teachers would rate him As a part of this study, the teachers of the five over- and five under-achieving boys were asked to rate the student on the same adjectives. Using the items which proved most significant in discriminating between over- and under-achievers:

1. Sample responses will be compared to teacher responses.

2. Teacher responses made concerning over-achievers will be contrasted with replies pertaining to under-achievers.

When data on the population were collected in the Fall of 1960, each student was asked to give the name of a present teacher who knew him best. The name of a teacher, who in the past knew him best, was also requested. These teachers were contacted on the same days the students were interviewed. In several cases the former teacher was

either the same person as the present teacher, or currently a member of the high school staff.

To complement the data concerning the student's past academic activities, a thorough study was made of his cumulative record. This information, together with that supplied by teachers, presents a rather complete biographical sketch of the boy as a student.

During the interviews with the student's teachers such questions as the following were asked:

1. How well do you know this student?
2. How would you characterize his performance as a student?
3. Does he get along with his classmates?
4. Has he ever discussed his future plans with you?
5. Do you consider his plans realistic for him?
6. Has he performed any act which you would consider outstanding or significant?

Before any of these questions was asked the teacher was invited to make any comments concerning the boy that he or she desired to make. This sort of free-association produced some significant insights into the boy's character. The only area for which definite information could not be gained in a number of the interviews was the "future plans" area.

The teachers, who in the past knew the student best, were also contacted. Questions similar to those asked of the present teachers were presented to these teachers as well. Only five of the ten former teachers named by the students were elementary or junior high school mentors. In order to obtain as much data as possible on this phase of thier educational development, recourse was had to the cumulative

record of each boy in the sample. In seven of the ten cases these files contained teacher ratings for each of the elementary grades.

Summary

The procedure followed in obtaining the sample for this study can be outlined:

1. An initial survey, of the testing programs presently employed in the 100 most populous cities of the state, was conducted in 1959.

2. From among these, the schools which administered the Differential Aptitude Test - Form A, were selected for the second step.

3. Each of the schools with ninth grade DAT scores were invited to participate in this motivational research project.

4. Nine schools were chosen to constitute the population The sophomore students in these schools, for whom ninth grade DAT scores were available, were then administered the California Test of Mental Maturity - Language.

5. Correlations between various sub-tests of the DAT and grade-point-average were computed. The sub-test which provided the best correlation was the Verbal Reasoning. This sub-test, together with the CTMM-L were the best predictors of GPA.

6. Regression equations and the standard errors of estimates for the prediction of DAT-VR scores from CTMM-L scores, and the reverse (CTMM-L scores from DAT-VR scores) were computed. The average of the intersection $\pm$ 1.00 standard error lines were used as limits.

7. Only those students whose measures of adademic ability, ninth grade DAT-VR, and tenth grade CTMM-L, showed stability were retained. The stability index included those within $\pm$ 1 00 standard error of estimate.

8. DAT-VR and GPA were correlated. A regression line predicting GPA from DAT-VR scores was computed. A standard error of estimate was determined. Students falling outside $\pm$ 1 00 standard error were taken as over-achievers. Those outside -1.00 standard error were identified as under achievers

9. This procedure was followed for each school in the study, and for males and females within each school.

10. Three of the nine schools were selected for the final phase. Over- and under-achieving boys from these schools were divided into quintiles according to their DAT-VR percentiles. From each quintile the over and under achieving male who deviated most from his predicted GPA were chosen to constitute the sample

A series of questions was formulated which would, in an empathic relationship, shed further light on the motivational patterns of the sample. These questions were asked in an interview setting and recorded on tape. The meetings may be described as semi-structured interviews for depth exploration. Two interviews were held with each of the ten members in the sample

The parents of the boys were also interviewed in their homes During the visit they were asked to respond together to the 59 most significant items from the Perceived Parental Attitudes Inventory.

Instructors were contacted, especially the teachers identified by the pupil as "knowing him best". The Word Rating List was administered to all of his present teachers. In addition to these interviews and inventories, use was made of the cumulative records in an effort to discover developmental patterns of academic motivation.

CHAPTER IV

THE ANALYSIS OF DATA

In this chapter an analysis is made of the factors underlying the Generalized Situational Choice Inventory, the Human Trait Inventory, and the Perceived Parental Attitudes Inventory. Significant items from the Word Rating List are also examined. Materials gleaned from cumulative records and teacher interviews, and which are pertinent to this investigation, are also provided.

Factors Underlying the Generalized Situational Choice Inventory

Description of Data

The evolution of the concept of a high need for academic achievement has been explained in the first chapter. The several factors stated by McClelland[1], and described in the same chapter, are postulated as being characteristic of over-achievers. Farquhar[2] presents the rationale underlying the assumption of the opposite factors for the under achievers by extending McClelland's theory to a bi-polar framework.

In this study depth interview questions were formulated to further explore these theoretical factors developed in the Farquhar Motivation Project. In the previous chapter these queries were presented together with the factors for which they were intended. Three judges rated each of the ten students in the sample on each of the

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[1]McClelland, op. cit.

[2]Farquhar, "A Comprehensive Study of the Motivational Factors Underlying Achievement of Eleventh Grade High School Students," op. cit.

three factors. All ratings were made solely on the impact of the interviews. The judges did not know the achievement classification of the students interviewed. The ratings, together with the factors, are presented in Appendix B.

The research hypothesis, stated directionally, is:

> There is a difference, in the predicted direction, between over- and under-achievers in the theoretical factors defined in this study.

An analysis of variance technique was applied to find the average reliability of all the raters on each of the factors when between-rater variance is removed. The results are presented in Table 4.

Table 4

AVERAGE RELIABILITY OF RATINGS, WITH BETWEEN-RATER VARIANCE REMOVED, OF THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE GSCI

Factor			Reliability
Over-Achievers		Under-Achievers	
1.	Long Term Involvement	1 Short Term	695
2	Unique Accomplishment	2 Common	.755
3	Competition with a Maximal Standard of Excellence	3 Competition with a Minimal Standard of Excellence	.626

Judges are about equally reliable in rating these three factors for over- and under-achievers in the sample. (Range of reliability coefficients: 626 to 755)

In order to test the significance of the differences in the means of the judges' ratings for over- and under-achievers (See Appendix E),

t-tests were made on each of the three factors The results are in Table 5

Table 5

TESTS OF SIGNIFICANCE OF THE MEANS OF RATINGS MADE BY THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE GSCI

Factor		t	Significance Level
Over-Achievers	Under-Achievers		
1. Long Term Involvement	1. Short Term	4 469	001
2 Unique Accomplishment	2. Common	3 848	.001
3 Competition with a Maximal Standard of Excellence	3 Competition with a Minimal Standard of Excellence	3 118	.01

For each of the three factors the means of the judges' ratings on over- and under-achievers differed significantly (at the 01 level), and were in the direction hypothesized by the theory stated in the Farquhar Project.

Factors Underlying the Human Trait Inventory

Description of the Data

Taylor[3], as a result of his analysis of the literature pertaining to personality traits exhibited by over- and under-achievers, grouped the traits into five factors. Each of the factors, together with the principal traits subsumed under them, is described in Chapter I

[3]Taylor, op. cit

Questions[4] were designed to explore these factors within the semi-structured interviews conducted for this investigation. The three judges studied the interview recordings for the presence of these factors. Their ratings were made on a discrete five-point scale, the high or "5" end of which represented the presence of the factor in over-achievers; the low or "1" end the presence of the opposite for under-achievers The results are presented in Appendix C.

The research hypothesis, stated directionally, is:

> There is a difference, in the predicted direction, between over- and under-achievers in the theoretical factors defined in this study.

The average reliability of the raters for each of the five factors was determined in the same manner as that used for the factors of the Generalized Situational Choice Inventory.

Table 6

AVERAGE RELIABILITY OF RATINGS, WITH BETWEEN-RATER VARIANCE REMOVED, OF THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE HTI

Factor		Reliability
Over-Achievers	Under-Achievers	
1 Controlled Anxiety	1 Free-floating Anxiety	798
2 Positive Authority Relationships	2 Hostility Toward Authority	493
3 Independence	3 Dependence	447
4 Academic Orientation	4 Social Orientation	606
5 Adequate Interpersonal Relationships	5 Inadequate Interpersonal Relationships	343

[4]See Chapter III

Judges were more reliable in their ratings of the Anxiety Factor and the Academic-Social Orientation Factor (range of reliability coefficients .606 to .798), than they were in their ratings of the remaining three factors where the range extended from .343 to .493

t-tests were made on the means of the judges' ratings on over- and under-achievers for each of the five factors (See Appendix C) The significanceof each of these tests is stated in Table 7.

Table 7

TESTS OF SIGNIFICANCE OF THE MEANS OF RATINGS MADE BY THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE HTI

Factor		t	Significance Level
Over-Achievers	**Under-Achievers**		
1 Controlled Anxiety	1. Free-floating Anxiety	7.793	.001
2 Positive Authority Relationships	2 Hostility Toward Authority	2.293	.05
3 Independence	3. Dependence	5.114	.001
4. Academic Orientation	4 Social Orientation	0.910	---
5. Adequate Interpersonal Relationships	5 Inadequate Interpersonal Relationships	3.655	.01

For all but one of these factors the means of the ratings are significantly different, and in the predicted direction. The factor dealing with academic and social orientation, though one of the most reliable, did not differentiate between the two groups of achievers as well as the other four factors Both types of achievers were rated as demonstrating more of a social orientation, though the over-achievers were rated slightly more toward the academic end of the scale

(See Appendix C)

Conclusion

With the possible exception of the academic-social orientation factor, the factors upon which the Human Trait Inventory was built appear to be present in over- and under-achievers

Factors Underlying the Perceived Parental Attitudes Inventory

Description of the Data

Payne[5] quotes research which attempts to study, either directly or indirectly, the effects of home environment, child rearing practices, and parental attitudes, on educational success. He lists seven factors which appear to characterize the parent-child interaction These factors were explained in Chapter I and are listed below in Table 8.

Questions were designed for this present investigation which would explore some of the dynamics of the home environment implied in these seven factors. Parents were asked to respond to them in an interview held in their homes. Both parents were present and their reactions, whether consonant or divergent, were recorded The tapes were given to the same three judges who rated the student interviews. As part of the interview, the parents were asked to respond, together, to 59 of the discriminating items from the PPAI (See Appendix A) These responses were made available to the judges as forming an integral part of the meeting with the parents. An analysis of the 14 most discriminating

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[5] Payne, op cit

items from these 59 items is presented later in this chapter

The research hypothesis, stated directionally, is:

> There is a difference in the predicted direction, between over- and under-achievers in the theoretical factors defined in this study.

The average reliability of all the raters, with between-rater variance removed, on each of the seven factors was determined by using the same analysis of variance procedure as was used for the previous factors

Table 8

AVERAGE RELIABILITY OF RATINGS, WITH BETWEEN-RATER VARIANCE REMOVED, OF THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE PPAI

Factor		Reliability
Over-Achievers	Under-Achievers	
1 Achievement Pressure	1 Non-Achievement Pressure	181
2. Permissiveness	2 Non-permissiveness	323
3 Poor Parent-Child Interaction	3 Good Interaction	663
4 Non-possessiveness	4 Possessiveness	.138
5 Undemocratic Guidance	5 Democratic Guidance	422
6 No Discipline	6 Discipline	351
7 Rejection	7 Acceptance	606

Reliability estimates reported in Table 8, above, may be grouped into three levels Judges are most reliable in rating students on the Parent-Child Interaction and Acceptance-Rejection factors (range of reliability coefficients: 606 to .663) Ratings are less reliable (range: .323 to 422) for the Guidance, Discipline, and Permissiveness Factors.

The least reliable ratings were found in the Achievement Pressure Factor with a reliability of .181, and the Possessiveness Factor with a coefficient of -.138. The low reliability of this latter group indicates a need for extreme caution in interpretation.

t-tests were made on the means of the judges' ratings on over- and under-achievers for each of the seven factors. The significance of these tests are stated in Table 9

Table 9

TESTS OF SIGNIFICANCE OF THE MEANS OF RATINGS MADE BY THREE JUDGES ON TEN STUDENTS FOR THE FACTORS UNDERLYING THE PPAI

Factor		t	Significance Level
Over-Achievers	Under-Achievers		
1. Achievement Pressure	1. Non-achievement Pressure	1.194	--
2. Permissiveness	2. Non-permissiveness	1.581	--
3. Poor Parent-Child Interaction	3. Good Interaction	2.023	.10
4. Non-possessiveness	4. Possessiveness	0.300	--
5. Undemocratic Guidance	5. Democratic Guidance	1.529	--
6. No Discipline	6. Discipline	2.279	.05
7. Rejection	7. Acceptance	2.022	.10

The study of the significance level of these t-tests together with the mean of the ratings given by the judges to over- and under-achievers on the seven factors (See Appendix D), presents more controversy in interpretation than was found in the interpretation of the previous factors underlying the Generalized Situational Choice Inventory and the Human Trait Inventory.

The difference in the means of ratings for over- and under-achievers on the Achievement Pressure factor, though not significant at the .10 level, is in the direction opposite to that stated in the theory. The theory states that the parents of over-achievers exert more pressure on their sons to achieve in academic subjects than do the parents of under-achievers. The judges found that parents of under-achievers exerted more pressure on their sons to achieve academically than did parents of over-achievers. The mean of the ratings for under-achievers was 3.60 with a standard deviation of .53, while the mean for over-achievers was 3.20 with a standard deviation of .53 The higher the rating on this factor the greater the pressure exerted by parents.

Reversals from directions hypothesized by the theory were also found in the following factors

1 The Parent-Child Interaction Factor as defined in this investigation implies a better interaction existing among parents and under-achievers than among over-achievers and their parents. Judges rated over-achievers as having better interaction than under-achievers at the .10 level of significance. The mean of the judges' ratings for the over-achievers on this factor was 3.93 with a standard deviation of .62. The mean for under-achievers was 3.13 with a standard deviation of .62 In this factor the higher the rating given the student the better the interaction between him and his parents

2. The Democratic Guidance Factor in this investigation states that parents of under-achievers are more democratic. This factor was found not significant at the .10 level. Judges' ratings resulted in a mean of 3.20 (standard deviation = .54) for over-achievers, and a mean of 2.66 (standard deviation of .54) for under-achievers, a reversal of the direction stated by the theory The higher the ratings given by the judges for this factor the more democratic was the guidance exhibited by parents toward their sons

3 Rejection - Acceptance Factor. The direction given this factor postulates rejection for over-achievers, and acceptance

for under-achievers. Judges rated under-achievers as being more rejected than over-achievers at the .10 level of significance. The mean of their ratings for over-achievers was 3.80 with a standard deviation of .47. The mean for under-achievers was 3.20 with a standard deviation of .47. For this factor the higher the rating given the more Acceptance was judged to be present in the home environment.

Judges' ratings for the remaining three factors, Permissiveness, Possessiveness, and Discipline, were in the direction predicted by the theory.

1. Permissiveness
   The theory states that parents of over-achievers are more permissive than are parents of under-achievers. The mean of the ratings given by the judges was 3,60 for over-achievers with a standard deviation of .60. The mean for under-achievers was 3.00 with a standard deviation of .60. The higher the ratings for this factor the more permissive were the parents.

2. Possessiveness
   Parents of over-achievers, states the theory, are less possessive than are parents of under-achievers. Judges gave a mean rating of 2.80 (standard deviation of .66.) to over-achievers, and a mean rating of 3.20 to under-achievers (standard deviation of .66.) The higher the ratings the more possessive the parents.

3. Discipline
   Parents of over-achievers, as stated in the theory, use less discipline than do parents of under-achievers. The mean of the judges' ratings for over-achievers was 2.53 with a standard deviation of .44. The mean for under-achievers was 3.06 with a standard deviation of .44. The higher the ratings for this factor the more discipline was used by parents.

Conclusion

The theoretical factors underlying the design of items for the Perceived Parental Attitudes Inventory do not all hold up under statistical analysis. Four of the seven factors: Achievement Pressure, Parent-Child Interaction, Democratic Guidance, and Rejection-Acceptance, do not discriminate (within the limits of this present investigation)

between over- and under-achievers in the direction stated by the theory. Of the three factors which were rated by the judges in the theoretical direction, viz. Permissiveness, Possessiveness, and Discipline, only the last was significant at the .05 level. Furthermore, the discipline factor was rated with questionable reliability which restricted interpretation of valid group differences.

Items from the Perceived Parental Attitudes Inventory Description of the Data

Fifty-nine of the items from the PPAI were presented to the parents as part of the interview. They responded together to these cues. In the Farquhar Motivation Study only 14 of the 59 items were found to be significant for both validation and cross-validation groups of over- and under-achievers. These validation groups are referred to in this present investigation as the criterion groups. The 14 items together with the direction of response given them by the criterion groups of over-and under-achievers, the parents and their sons are given in Appendix E.

Two hypotheses were stated with respect to these 14 significant items

> There is a positive relationship between the direction of responses of the sample of over- and under-achievers and their parents on the items.
>
> There is a positive relationship between the direction of the responses made by the parents of over- and under-achievers and the direction of the responses made by the criterion groups of over- and under-achievers respectively

Separate chi-squares were calculated for over- and under-achievers.

Phi-coefficients of correlation were also determined for the variables studied

Table 10

CHI-SQUARES AND PHI-COEFFICIENTS CALCULATED ON THE PARENT-STUDENT AND PARENT-CRITERION GROUPS RESPONSES TO THE 14 SIGNIFICANT ITEMS FROM THE PPAI

Response Groups	Chi-Square	Significance Level of Chi-Square	Phi
Over-Achievers			
Parent-Student	6 863	01	.313
Parent-Criterion Groups	25 620	001	605
Under-Achievers			
Parent-Student	6 480	02	304
Parent-Criterion Groups	16 590	001	- .486

Conclusions

The five over-achievers and their parents agree 46 times out of a maximum 70 comparisons (five comparisons for each of the 14 items.) The significance level for this number of agreements was 01 with a significant phi of .313 Parent-Criterion group similarities number 55 out of 70 with a significance level of 001 and a phi = .605 Thus it appears that over-achievers and their parents agree more than can be expected by chance on their responses when the whole group is considered together, but when individual students and parents are compared the correlation (313) is not high

In 70 comparisons 47 were alike and 23 were different for under-

achievers and their parents Parents and the criterion group agreed only 21 times out of 70 The chi-square resulting from this analysis (16.59) was significant at the 001 level, and correlated negatively (-.486). The parents do not agree with the direction given the item by the criterion group of under-achievers. Parents of under-achievers were found to respond almost in the same manner as parents of over-achievers, especially in the last five items listed in Appendix E.

Items from the Word Rating List

Description of the Data

Of the 119 items in the Word Rating List 48 proved significant at the .10 level for males, after being tested on both the validation and cross-validation groups. These validation groups of the Farquhar Project are referred to in this investigation as the criterion groups. The teachers of the five over-achievers and five under-achievers in the sample were asked to rate these students on the 48 items A total of 24 teachers rated the over-achieving boys, while 23 completed ratings for the under-achievers. The items together with the number of teacher-student agreements, and the number of teacher-criterion group agreements are given in Appendix F

Two hypotheses were stated with respect to the 48 significant items

> There is a positive relationship between the direction of responses of the sample of over- and under-achievers and their teachers on the items.
>
> There is a positive relationship between the direction of the responses made by the

teachers of over- and under-achievers, and the direction of the responses made by the criterion groups of over- and under-achievers, respectively

Separate chi-squares were calculated for over- and under-achievers Phi-coefficients of correlation were also determined for the variables studies.

Table 11

CHI-SQUARES AND PHI-COEFFICIENTS CALCULATED ON THE TEACHER-STUDENT AND TEACHER-CRITERION GROUPS RESPONSES TO THE 48 SIGNIFICANT ITEMS FROM THE WRL

Response Groups	Chi-Square	Significant Level of Chi-Square	Phi
Over-Achievers			
Teacher-Student	221 990	001	.438
Teacher-Criterion Groups	391 790	001	583
Under-Achievers			
Teacher-Student	189 88	001	.414
Teacher-Criterion Groups	1 2144	not sig	033

Conclusions

Students accurately perceived their teachers rating of them on the characteristics stated in the significant items from the Word Rating List. More teachers of over-achievers rated their students in the direction given the items by the criterion groups, than did teachers of under-achievers. These latter teachers did not ascribe negative traits such as rebellious, different etc to their students The presence of a "leniency effect" is evident in the tendency to avoid the negatively-

toned items

Cumulative Records and Teacher Interviews

Cumulative records were available for seven of the ten students interviewed: four over-achievers and three under-achievers Characteristics manifested during the elementary and junior high school years, and which bear upon the factors influencing academic achievement, may be listed as follows for:

1 Over-Achievers

a Reliable and responsible.
b Shows leadership ability.
c. Thrives on competition, yet works well with others
d Able to take care of himself.
e Makes good use of time.
f Strives to overcome difficulties
g. Ambitious

2 Under-Achievers

a. Finishes work only under pressure.
b Immature
c. Some home problems among parents
d Can do good work when he applies himself
e. A decline in achievement as he progresses through school
f. Did not exhibit leadership qualities

All of these traits were not present in each of the students, yet their incidence in the group warrants a tentative conclusion as to their presence and influence.

Each of the teachers mentioned by the boy as "knowing him best" was interviewed. Their responses relative to the two groups may be summarized

1 Over-Achievers

a Good students who need little prodding
b Work is handed in on time.
c Enjoy class discussions
d They are competitive in class

e Some are leaders, often in a "quiet way"
f They will do well in their chosen careers
g Parents are interested and cooperative.

2 Under-Achievers

a Need prodding They need to be encouraged frequently
b Do not seem to exhibit an interest in what is going on in school
c. They are not leaders, but are accepted by their class mates.

These characteristics seem to be common to all of the students in each achievement category As to "future plans", most of the teachers stated that this topic was not usually discussed Much of their contact and knowledge of the student centered around the classes which they shared in the teacher student relationship

Summary

In this chapter all the data gathered from the student interviews, parent interviews, teacher responses to significant items from the Word Rating List, parent responses to 14 items from the Perceived Parental Attitudes Inventory, and teacher interviews and cumulative records, were analyzed.

Judges' ratings on the three bi-polar factors underlying the Generalized Situational Choice Inventory: Long Term - Short Term Involvement, Unique Common Accomplishment, and Competing with a Maximal - Competing with a Minimal Standard of Excellence, were examined The average reliability of the ratings was measured by an analysis of variance technique and fell in a 63 to 76 range Differences in the means of judges ratings of the three factors were measured by a t test and found to be significant (at the 01 level), and in the direction stated

by the theory.

Ratings on the five bi-polar factors upon which the Human Trait Inventory was based were also studied. The average reliability of ratings for these four factors were in a range extending from .34 to .80. Four of the factors: Controlled - Free-floating Anxiety, Positive Authority Relationships - Hostility Toward Authority, Independence - Dependence, and Adequate - Inadequate Interpersonal Relationships were found to be significant at the .05 level and better. The fifth factor, Academic - Social Orientation was not significant. Judges rated both over- and under-achievers in the direction of a Social rather than an Academic orientation.

The factors underlying the Perceived Parental Attitudes Inventory did not prove as statistically significant as the preceeding factors. Four of the seven factors predicted in a direction opposite to that stated by the theory basic to the Inventory. These four factors were: Achievement Pressure, Parent-Child Interaction, Democratic Guidance, and Rejection - Acceptance. Judges rated over- and under-achievers in the theoretical direction on only three factors: Permissiveness, Possessiveness, and Discipline. Only one of these, Discipline, was significant at better than the .05 level.

A study of 14 significant items from the Perceived Parental Attitudes Inventory revealed that over-achievers and their parents reply to the items in a similar manner. The chi-square resulting from the comparisons was significant at the .01 level, but the phi-coefficient was only .313. For under-achievers and their parents the comparisons were significant at the .02 level, the phi-coefficient was

304 Parents of over-achievers agreed with the direction of the response given the items by the criterion groups, but parents of under-achievers did not (a negative correlation of .486 for these groups.)

Teachers and their students respond to the 48 items of the Word Rating List in a manner significantly similar. Both chi-squares were significant at the .001 level and had phi-coefficients of 438 (over-achievers and teachers) and .414 for under-achievers and teachers. Teachers of under-achievers do not agree with the criterion group when it comes to ascribing negative characteristics to their students.

A study of the cumulative records, and a summary of the interviews with the teachers who knew the students in the sample best, are also provided.

In Chapter V further conclusions and interpretations of the data will be given.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

This last chapter consists of three sections In the first, a restatement of the problem is made. The place of this study in the total Farquhar Motivation Project, its methodology, hypotheses and findings are summarized A series of conclusions, resulting from an analysis of the data, consituted the second section. In the last few paragraphs some implications for further research are made. It is in this last section that one of the two purposes guiding this study has its expression.

Summary

The Problem

A number of theories have been developed relating to the motivational situation in the academic setting, to personality characteristics of over- and under-achievers, and to parental factors as they might be related to academic achievement. In the Farquhar Motivation Project several factors describing over- and under-achievers were formulated from these theories. These theoretical factors were then used as bases for the design of several objective inventories In this present study the same factors were investigated through the use of semi structured interviews with over- and under achieving students, their parents, and teachers.

Hypotheses

Three principal hypotheses were formulated The first concerned

the presence of the 15 factors postulated in the Farquhar Project, in the direction stated by the theory, in the sample of over-achieving and under-achieving male high school juniors.

In one of the objective inventories, the Perceived Parental Attitudes Inventory, the student was asked to rate an item as he perceived his parents would rate it. Fourteen of these items (See Appendix E) were administered to the parents of the sample. In a second inventory, the Word Rating List, the student was requested to rate himself as he perceived his teachers would rate him. Forty-eight of the items (See Appendix F) were administered to the teachers of the five over-achieving and five under-achieving boys in the sample.

A second hypothesis was stated concerning the responses to these items.

> There is a significant relationship between the direction of the responses of the sample of over- and under-achievers and their parents on the items from the PPAI, and between the direction of the responses of the same over- and under-achievers and their teachers on the items from the WRL.

Within the limits of this investigation, an analysis was made of the relationship of the direction of parent responses to the 14 PPAI items and the direction of the responses given to the items by the criterion groups of over- and under-achievers. These criterion groups were the same as the validation[1] groups used to test the significance of the inventory items. The direction of responses to the 48 items from

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[1]Farquhar, "A Comprehensive Study of the Motivational Factors Underlying Achievement of Eleventh Grade High School Student", op. cit. p. 7.

the WRL were also compared to the direction of the responses of these criterion groups A hypothesis was formed which stated:

> There is a positive relationship between the direction of the responses made by the parents and the criterion groups; and between the direction of the responses made by the teachers and the criterion groups.

Response of "Strongly Agree" and "Agree" to PPAI items were given a "+" direction, responses of "Strongly Disagree" and "Disagree were given a "-" direction. For the WRL responses of "Usually" or "Always" were given a "+" direction, those of "Sometimes" or "Never" a "-" direction.

The Sample

Farquhar and associates selected nine high schools to participate in the validation of the objective inventories designed for their Motivational Project. The inventories were administered to the eleventh grade students in these schools. Each of these students had been identified as a normal, under- or over-achiever by means of a Two-Step Regression technique[2] which used the grade-point-average, the scores on the Differential Aptitude Test - Verbal Reasoning and California Test of Mental Maturity - Language for each member in the sample

For the interview phase of the Project covered by this investigation a group of ten boys was selected from the juniors in three of the nine schools. Five were chosen from those identified in these three schools, as over-achievers, and five were selected from those identified as under-achievers In order to obtain students from the full range of academic aptitude, the DAT-VR percentiles were divided

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[2]See Chapter I

into quintiles. From the group in each quintile, the one over-achieving boy who deviated most from the predicted GPA, and the one under-achieving boy who deviated most, were chosen to make up the total sample of ten. A description of their deviation from predicted GPA is given in Chapter III.

Methodology

Questions were designed to assess the presence of each of the theoretical factors used as bases for the objective inventories in the Farquhar Project. These questions were presented in a series of semi-structured interviews with the ten students constituting the sample, the parents of these students, and the teachers who knew them best In Chapter III the factors are presented together with the questions designed to explore each of the factors. The same questions were asked in each interview, but not necessarily in the same order If the response to one query offered a logical opening for another, that statement was presented. All interviews were tape recorded.

Recordings of the student and parent interviews were presented to three judges, all with doctoral level training in clinical and counseling psychology. Each was asked to rate, on a discreet five-point scale, the degree to which the student possessed each of the factors which pertained to him. The same type of scale was used for rating the factors pertinent to parents One end of the scale represented a factor which the theory postulated concerning over-achievers, the other end the factor theorized as being characteristic of under-achievers The judges had knowledge of the achievement classification of the

student Their judgments were made solely on the impact of the interview.

In addition to the interview data, the parents and teachers were requested to respond to significant items from the Perceived Parental Attitudes Inventory and the Word Rating List, respectively. Additional information concerning the students in the sample was obtained from cumulative records.

Findings and Conclusions

The data gathered on the factors underlying the items of the objective inventories designed to measure academic achievement motivation by Farquhar and associates, as well as student, parent, teacher, and criterion group. (over- and under-achievers in the validation groups of the Farquhar Project) responses to the significant items themselves, have been analyzed. The findings, and some oonclusions within the limits imposed by the small sample, are presented

Factors Basic to the Inventories Designed for the Farquhar Motivation Project.

An analysis of variance technique was applied to find the average reliability of all the three raters on each of the fifteen factors, when between-rater variance is removed. T-tests were used to test the significance of the differences in the means of the judges' ratings for over- and under-achievers on each of the fifteen factors.

For the Factors Basic to the Generalized Situational Choice Inventory, namely:

For Over-Achievers	For Under-Achievers
Long Term Involvement	Short Term Involvement
Unique Accomplishment	Common Accomplishment
Competition with a Maximal Standard of Excellence	Competition with a Minimal Standard of Excellence

The following conclusions can be made:

1. Judges were about equally reliable in rating these three factors. (Range: .626 to .755)

2. The differences in the means of the ratings for over- and under-achievers were all significant at the .01 level, and in the direction predicted by the theory.

For the Factors Upon Which the Human Trait Inventory was Build, namely:

For Over-Achievers	For Under-Achievers
Controlled Anxiety	Free-floating Anxiety
Positive Authority Relationships	Hostility Toward Authority
Independence	Dependence
Academic Orientation	Social Orientation
Adequate Interpersonal Relationships	Inadequate Interpersonal Relationships

The following conclusions may be made:

1 Judges were not consistent in their rating of the five factors. The range of reliabilities extended from .343 to .798, with the Anxiety and Social-Academic Orientation factors receiving the highest reliabilities.

2. The t-tests, used to measure the significance of the difference in the means of the ratings given over- and under-achievers on each of the factors, were all significant (at .05 level or better) except the t-test for the Social-Academic Orientation factor. This factor did not discriminate between the achievement groups. Both groups were rated as possessing a Social Orientation. However, the mean for over-achievers was slightly higher in the direction of Academic Orientation (as predicted by theory) than was the mean for under-achievers.

The factors upon which the Perceived Parental Attitudes Inventory was designed did not hold up as well as the other factors. Means of

judges' ratings for over- and under-achievers were in the predicted direction for only three of the factors:

For Over-Achievers	For Under-Achievers
Permissiveness	Non-permissiveness
Non-possessiveness	Possessiveness
No Discipline	Discipline

Though the means were in the direction of theory, only the means for the Discipline Factor were significantly different at the 10 level Reliability of ratings for this factor was .351

Judges gave mean ratings which were reversals of theory for these four factors:

For Over-Achievers	For Under-Achievers
Achievement Pressure	Non-achievement Pressure
Poor Parent-Child Interaction	Good Parent-Child Interaction
Undemocratic Guidance	Democratic Guidance
Rejection	Acceptance

The Rejection-Acceptance, and Interaction factors discriminated between the achievement groups at the .10 level, but in the direction opposite to that stated in the theory. The remaining factors were not significant at the .10 level

Reliability estimates of judges' ratings, with between-rater variance removed, extended over a range of .181 to .663, with one (Possessiveness Factor) being a -.138.

The Analysis of Significant Items From the Perceived Parental Attitudes Inventory and the Word Rating List

The 14 most significant items from the PPAI were administered to

the parents of the over- and under-achievers. The direction of their responses were compared to the direction of the responses given to the same items by their sons. Also, the direction of parent responses (+ or -)* were compared to the direction given the response by the criterion groups of over- and under-achievers.

Separate chi-squares were calculated for over- and under-achievers. Phi-coefficients of correlation were also determined for the variables studies. The chi-squares were all significant at the .02 level or better. The phi-coefficient for parents of under-achievers and criterion group of under-achievers resulted in a -.486. This latter statistic bears out the fact that parents of under-achievers do not respond to these items in the same way as the Farquhar Project validation groups of under-achievers. The comparisons of responses for the

Over-Achievers	Under-Achievers
Parent-Student	Parent-Student
Parent-Criterion	

were found to be significantly related and in the positive direction.

Each of the teachers of the ten students was asked to respond to the 48 significant items from the Word Rating List. In order to test the significance of the relationship of the direction of response given these items by the students and their teachers, as well as by the teachers and the criterion group of over- and under-achievers, separate chi-squares were calculated. Each separate response was given a + direction if it was answered "usually" or "always", and a -

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*If the response to an item was "Strongly Agree" or "Agree" it was given a "+" direction, if the response was "Strongly Disagree" or "Disagree" a "-" direction was given.

direction if it was answered "sometimes" or "never". Chi-squares were significant for the following response groups:

Over-Achievers	Under-Achievers
Teacher-Student	Teacher-Student
Teacher-Criterion	

Teachers of under-achievers do not rate their students in the direction given the item by the criterion group of under-achievers. Even though under-achievers in the Farquhar validation groups perceived their teachers as rating them in a certain way, the teachers did not in actuality so rate them. The principal difference between these two response groups lies in the rating of negative personality traits. Teachers of under-achievers do not rate their students as possessing these traits. (See Appendix F)

Implications for Further Research

Familiarity with the inventories designed to measure academic achievement motivation, as well as an opportunity to test the factors underlying them, provide an overview which encompasses the entire motivation study. It is from this perspective that these few suggestions for further investigation are presented.

1. As a result of using a regression technique for the selection of the over- and under achievers, few of the validation groups (if divided into quintiles or quartiles) were high-ability over-achievers, and only a few were low-ability under-achievers. Most could be considered low-ability over-achievers. What results would a validation of the inventories on each division of ability (say, quintiles) have on the items finally selected for inclusion in the objective measure of academic achievement?

2. A valuable area for further research may be offered by a study of the group of over-achievers who do succeed in maintaining high grades (not the highest), but at the expense of their mental, and perhaps, physical well being. This group is described by teachers as being tense, anxious, apprehensive, nervous, not sharing in normal social activities. What items, or factor clusters characterize this group?

3. Subsumed under the concept "personality" is the need for achievement. This achievement can certainly be, for the student, other than in the sphere of academic success. Within the very narrow limits of the interviews conducted with and concerning the five under-achieving boys, it appeared that each has a non-academic area in which he excels. One is building a 17' sail-boat, another is a voracious reader, a third is an outstanding drummer. What factors are motivating these "under-achievers?"

4. In line with the above suggestion, some research could be conducted with small numbers participating in a group guidance relationship. In these more intimate settings this group of under-achievers could be presented with some of the characteristics which motivate one to achieve academically. Help them to incorporate some of these into their own behavior system. See if they increase their own behavior system. See if they increase their achievement over a semester or a year. Some of the characteristics can be developed in the same manner as study skills and attitudes. Which factors are they? How can they be "taught"? The same thing might possibly be done with groups of parents emphasing acceptable child-rearing practices.

5. Several tasks from the Wechsler Adult Intelligence Scale (Picture Arrangement and Block Design) were used in the interviews with the over- and under-achievers. In a few cases, especially with two of the under-achievers and one of the over-achievers, these tasks enabled the student to see some of the dynamics which influence him as he attempts the solution of a difficult task. When he was asked to explain his reactions, he began to experience - under guidance - some of his needs and motivations. The design and validation of a unique series of problems which could be used by the counselor to explore motivational forces would be a valuable counseling tool. These problems would be used in addition to the objective instruments which will measure academic motivation.

6. Uniformly favorable responses are given by teachers (especially in the Word Rating List) for all over-achievers. Does this reflect a realistic outlook? Can each of these

people succeed in more advanced academic endeavors if the measures of their academic ability are valid ones? What results does this reinforcement from teachers have on the person's image of his academic ability Many of these people come to college where competition is more intense, and suddenly these reinforc ements are no longer forthcoming. Are the attributes found in the Word Rating List the same which must be cultivated for college success? Perhaps this instrument could be validated on college subjects?

7. The "risk" factor appears to characterize over-achievers. The risks seem to involve "taking a chance" in academic endeavors. What about the risks involved in non-academic endeavors such as those found in joining a motor-cycle club (an item which is scored for under-achievers). Some under-achievers were found to undertake dangerous assignments alone, over-achievers in company with others. A more thorough study of this factor may lead to some valuable conclusions.

8. Teachers do not rate under-achievers as being: inefficient, different, uninterested, rebellious, nervous, subborn, lazy, inconsistent, impatient, or passive. These items differentiated over from under-achievers in the validation group. A series of thorough interviews with a selected group of teachers might be conducted to investigate this seeming contradiction.

9. Parents of over- and under- achievers respond in almost the same way to significant items from the Perceived Parental Attitudes Inventory. When interviewing the parents of the sample, many qualifications were made when a response was recorded for certain items. If the qualifications were studied, with a larger group, differences would appear in areas not found to discriminate now Perhaps a more stringent definition of "child" needs to be given (state it in age groupings.) Also, the response categories could be changed to: "My parents would agree," " . .disagree," "I do not know how my parents would react " With these modifications the inventory may become more discriminating.

10. The Discipline factor should be investigated through interviews with a larger group. From home visitations it appears that the parents of over-achievers exert more subtle pressure on their children to study than do parents of under-achievers. Parents of under-achievers seem to desire such discipline, but do not seem to know how to implement it.

11 Lastly, if this study is replicated, the inventories should be administered to small homeroom or subject-matter groups one or two instruments a day. Administration to such groups might increase the validity and reliability of the instruments

Toward a New Theory of Academic Motivation

The student's personality finds expression in the home relationships with parents and siblings as well as within the classroom interchange of pupils and teachers. The peer group expectations, often out of harmony with those of family and school, also exert a compelling influence on the need for achievement. How the individual perceived himself and his role within this complex environment, will determine his behavior in the academic sphere

Any approach toward an understanding of the motivational factors underlying academic achievement should, therefore, include these three elements: personality, situation, and self perception Each of these three elements includes a multitude of factors, some of which have been studied in this investigation. Theories emphasizing one or the other, and neglecting their dynamic interrelationship, will provide only fragmentary data. In the Farquhar Motivation Study the research team has attempted to provide a picture of the deviant achievers from this three-point perspective.

New interpretations have been provided in this Motivation Study for theories previously tested. These new insights emphasize the interrelatedness of the separate factors in the development of the need for academic achievement. The objective instruments, resulting from a compilation of the significant items selected from the various inventories designed for the project, will provide a valuable tool for teachers and counselors The rationale of the entire Farquhar Study, and the rigorous analysis to which it has been subjected, will provide a starting point for a more comprehensive investigation of the motivation for academic achievement.

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APPENDIX A

ITEMS FROM THE PERCEIVED PARENTAL ATTITUDES INVENTORY

ADMINISTERED TO THE PARENTS

1. It is very important that a child be taught to keep himself neat and clean.
2. It is not necessary to notice all of a child's accomplishments
8 The mother rather than the father should be responsible for discipline.
11. If a father punishes a child, the mother should stand up for the child's rights.
14. It is all right for a child to be allowed to play alone in the yard at an early agree.
15. It is not necessary for a child to eat everything on his plate.
17. It is very important that a child be taught to be honest.
19. Parents need not insist that young children take naps.
24. It is unreasonable to expect that a child will stick up for parents when the parents are in the wrong.
25. Children are often cruel to their parents.
32. In the long run it is better for a child to be kept fairly close to his mother
33. Parents should like the same things as thier children.
34. Children will neglect their school work if parents do not keep after them.
37. It is better for children to play at home than to visit at other peoples houses.
40 Young children should not be allowed to stay out after dark.
44. When parents speak, children should obey.
46. It is not the most important thing to give children all the comforts they want.
50. If children get into trouble, parents will help them.
53. It is normal for children and their mothers to agree on all matters.
59. It is good for children to sometimes "talk-back" to parents.
60. It is a mother's duty to know just about everything that her children are thinking about.
62. The sooner children are not dependent upon the emotional ties to their parents, the better they will handle their own problems.
69. Parents understand that their child's school work is hard.
71. It is reasonable to expect that boys should want to be like their fathers.
75 Parents should not require thier children to undertake very difficult tasks.
76. When children can't have their own way, they should try to bargain or reason with their parents.
78. Parents should show interest, pride and affection in their children.
82. It is all right for young children to sleep with their mothers.
83. Children should not annoy their parents with unimportant problems.
91. A great deal of discipline is necessary to train children properly.
94. A child should be independent.
95. Firm and strong discipline make for strong character in later life.
98. Children do not "act lazy" without some important reason.
100. Making a child feel wanted and loved is the surest way to obtain good behavior or get him to mind.
101. All families should be very close.

102. Children should always be loyal to their parents.
103. Children can respect their parents.
104. Children don't always get along well with their parents.
106. Parents cannot help it if their children are naughty.
110 A child should not generally question the commands of his mother.
111 A child should be taught to make his own decisions.
113 Some parents do not have control enough over their children.
115. A mother should stand up for her child.
116 After a certain age, it is best for parents and their children not to be emotionally involved.
118. Parents have the best interests of their children at heart.
120. Children should generally do nothing without the consent of their mothers.
122. Parents should watch their children closely at all times.
124. It is normal for children to occassionally disobey their parents.
127 Almost any child who is not plain lazy can do well in school if they try.
128 A child should always believe what his parents tell him.
129. Father should be respected more than mother
131. Parents should make a real effort to understand their children's problems.
133. If children wish to please their parents, they should obey them.
137 It is very important to get an education.
140 Fathers do not have to insist that their children mind them.
142. Parents should do lots of things with their children.
145 Not all children can do well in school.
147. Mothers should be very understanding.
150. The best child is the one who shows lots of affection for his mother.

Appendix B

Ratings of Judges on the Factors Underlying the
Generalized Situational Choice Inventory

Appendix B
Ratings of Judges on the Factors Underlying the
Generalized Situational Choice Inventory

Scale Used by Judges

1 2 3 4 5

Factors

		Over-Achievers					Under-Achievers				
	Quintile	1	2	3	4	5	1	2	3	4	5
	Deviation From Predicted GPA	+.96	+.75	+.92	+.91	+.90	-.15	-.40	-.70	-.30	-.82
Short term involvement....Long term	A	4	4	4	2	5	1	3	4	2	3
	Judge B	4	4	4	4	5	1	2	2	2	3
	C	5	4	4	4	4	1	2	5	2	4
		Mean rating = 4.00					Mean rating = 2.46				
	A	4	4	5	2	4	2	2	3	2	4
Common accomplishment....Unique	Judge B	3	4	4	4	5	1	2	3	2	4
	C	4	4	4	3	4	2	1	4	2	4
		Mean rating = 3.86					Mean rating = 2.53				
	A	3	2	5	3	5	1	2	2	3	4
Competing with a Minimal Standard...Competing with a Maximal Standard	Judge B	3	4	4	4	5	1	2	2	2	2
	C	2	2	4	2	5	2	2	1	2	5
		Mean rating = 3.53					Mean rating = 2.20				

Appendix C

Ratings of Judges on the Factors Underlying the Human Trait Inventory

Appendix C
Ratings of Judges on the Factors Underlying the Human Trait Inventory

Scale Used by Judges

1 2 3 4 5

		Over-Achievers					Under-Achievers				
	Quintile	1	2	3	4	5	1	2	3	4	5
	Deviation from Predicted GPA	+.96	+.75	+.92	+.91	+.90	-.15	-.40	-.70	-.30	-.82
Free-floating Anxiety...Controlled	A	4	4	4	4	4	1	2	3	2	3
	Judge B	4	4	4	4	5	1	2	2	2	3
	C	4	4	3	4	4	2	2	4	2	2
		Mean rating = 4.00					Mean rating = 2.20				
Hostility toward authority...Good Relationships	A	5	3	3	2	4	1	3	3	4	3
	Judge B	4	5	4	4	4	1	3	2	3	4
	C	5	4	2	4	4	2	3	4	3	5
		Mean rating = 3.80					Mean rating = 2.93				
Dependence...Independence	A	4	4	4	2	5	3	2	3	2	3
	Judge B	4	3	4	4	5	3	3	2	2	3
	C	4	4	4	4	3	2	2	4	2	2
		Mean rating = 3.86					Mean rating = 2.53				
Socially oriented...Academically	A	2	2	3	2	4	3	3	2	2	3
	Judge B	3	2	3	3	4	3	3	1	3	2
	C	3	2	4	2	4	3	3	2	2	4
		Mean rating = 2.86					Mean rating = 2.60				
Inadequate interpersonal relationships... Adequate	A	3	3	3	2	3	1	2	2	2	2
	Judge B	4	5	5	4	4	1	3	3	2	3
	C	4	4	2	4	2	2	2	4	4	2

Appendix D

Ratings of Judges on the Factors Underlying the Perceived Parental Attitudes Inventory

Appendix D
Ratings of Judges on the Factors Underlying the Perceived Parental Attitudes Inventory

Scale Used by Judges

Hypothesized direction for overachievers →

1 2 3 4 5

Non-achievement pressure. .Achievement

		Over-Achievers					Under-Achievers				
	Quintile	1	2	3	4	5	1	2	3	4	5
	Deviation from Predicted GPA	+.96	+.75	+.92	+.91	+.90	-.15	-.40	-.70	-.30	-.82
Judge	A	4	3	2	4	3	2	4	4	4	4
	B	4	3	5	3	2	3	4	3	3	4
	C	4	4	2	2	3	2	4	5	4	4
		Mean of ratings = 3.20					Mean of rating = 3.60				

Non-permissive...Permissive

Hypothesized direction for overachievers ←

Judge	A	4	2	4	4	4	4	3	2	2	2
	B	2	4	2	5	5	4	4	4	4	2
	C	4	2	4	4	4	4	4	2	2	2
		Mean of ratings = 3.60					Mean of rating = 3.00				

Poor Parent-child interaction...Good

Judge	A	4	2	4	5	4	4	4	2	3	1
	B	4	4	3	5	5	4	4	4	4	2
	C	4	2	4	5	4	5	4	2	2	2
		Mean of ratings = 3.93					Mean of rating = 3.13				

Non-possessive...Possessive

Judge	A	2	4	2	3	3	2	3	3	3	5
	B	4	2	5	1	1	4	2	4	4	3
	C	2	4	2	4	3	2	3	2	3	5
		Mean of ratings = 2.80					Mean of rating = 3.20				

Undemocratic guidance...Democratic

Judge	A	4	2	4	4	4	4	3	2	2	1
	B	2	3	2	4	3	3	4	4	2	2
	C	3	2	3	4	4	4	3	2	2	2
		Mean of ratings = 3.20					Mean of rating = 2.66				

Appendix D (con't)
Ratings of Judges on the Factors Underlying the
Perceived Parental Attitudes Inventory

		Over-Achiever					Under-Achiever				
No discipline...Discipline	A	3	3	2	2	2	3	3	4	5	4
	Judge B	3	3	3	2	1	2	3	2	2	2
	C	3	4	3	2	2	3	3	3	4	4
		Mean of ratings = 2.53					Mean of rating = 3.06				
Rejection...Acceptance	A	4	3	4	4	4	4	4	2	2	2
	Judge B	4	4	3	4	4	4	5	4	4	2
	C	4	3	4	4	4	4	4	2	3	2
		Mean of ratings = 3.80					Mean of rating = 3.20				

Appendix E

Parent and Student Responses to the Fourteen Discriminating Items from the Perceived Parental Attitudes Inventory

Appendix E

Parent and Student Responses to the Fourteen Discriminating Items from the Perceived Parental Attitudes Inventory

	Direction for over-achievers	Over-Achievers								Direction for under-achievers	Under Achievers							
		Parent	Student	Parent	Student	Parent	Student	Parent	Student		Parent	Student	Parent	Student	Parent	Student	Parent	Student
Parents need not insist that children take naps	-	-	-	-	-	+	-	+	-	+	-	+	+	-	+	-	-	+	-
Parents should like the same things as their children.	-	-	-	+	-	+	-	-	-	+	-	-	+	-	-	-	-	-	+
Children will neglect their school work if parents do not keep after them.	-	-	+	+	-	+	+	-	-	+	+	+	+	+	+	+	+	+	+
Children should not annoy their parents with unimportant problems.	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	+	+	+	-
Parents cannot help it if their children are naughty.	-	+	-	-	-	-	-	-	-	+	+	-	+	-	+	+	-	-	-
After a certain age, it is best for parents and their children not to be emotionally involved.	-	+	+	+	-	+	+	-	-	+	+	+	+	+	+	-	+	+	-
Children should generally do nothing without the consent of their mothers.	-	-	-	+	+	-	+	-	+	+	-	-	-	-	-	+	-	+	+
Fathers do not have to insist that their children mind them.	-	-	+	-	-	-	+	-	-	+	-	-	-	-	-	-	-	+	-
The best child is the one who shows lots of affection for his mother.	-	-	+	-	-	-	+	-	-	+	-	-	-	-	+	+	-	+	-
A mother should stand up for her child.	+	-	+	+	+	+	-	+	+	-	+	-	+	+	+	+	-	+	-
If children wish to please their parents, they should obey them.	+	+	+	+	+	+	+	-	+	-	+	+	+	+	+	+	+	-	+
It is very important to get an education.	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+

Appendix E (Con't)

Parent and Student Responses to the Fourteen Discriminating Items from the Perceived Parental Attitudes Inventory

	Direction for over-achievers	Parent	Student	Parent	Student	Parent	Student	Parent	Student	Parent	Student	Direction for under-achievers	Parent	Student	Parent	Student	Parent	Student	Parent	Student	Parent	Student
Parents should do lots of things with their children.	+	+	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+
Mothers should be very understanding	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+
Number of differences in direction of response between parents and sons.		6		3		7		3		5			2		3		5		7		6	
		Mean = 4.80											Mean = 4.60									
		Parent	Student	Parent	Student	Parent	Student	Parent	Student	Parent	Student		Parent	Student	Parent	Student	Parent	Student	Parent	Student	Parent	Student
Differences from the direction given the item by the criterion groups.		3	5	4	1	4	7	2	1	2	3		10	10	9	12	10	7	10	7	10	8
		Mean for parents = 3.00 Mean for students = 3.40											Mean for parents = 9.80 Mean for students = 8.80									

If the response to an item was "Strongly Agree" or "Agree" it was given a "+" direction, if the response was "Strongly Disagree" or "Disagree" a "-" direction was given.

Appendix F

Responses of Teachers and Student to the Significant Items of the Word Rating List

Appendix F
Responses of Teachers and Student to the Significant Items of the Word Rating List

	Direction given the item by criterion groups.	Number of teacher responses which are in the same direction as the criterion groups	Number of teacher responses which are in the same direction as the student responses.	Direction given the item by criterion groups.	Number of teacher responses which are in the same direction as criterion groups.	Number of teacher responses which are in the same direction as the responses made by their students.
Patient	+	20	17	-	9	16
Talented	+	14	10	-	18	13
Practical	+	21	10	-	13	15
Confident	+	17	19	-	13	12
Logical	+	20	14	-	17	13
Smart	+	13	13	-	19	12
Successful	+	17	16	-	16	11
Careful	+	18	12	-	17	14
Thorough	+	14	12	-	19	18
Orderly	+	18	19	-	15	16
Purposeful	+	19	13	-	17	11
Studious	+	19	18	-	17	16
Responsible	+	20	17	-	15	14
Original	+	8	11	-	22	13
Consistent	+	21	21	-	13	13
Intelligent	+	20	18	-	14	12
In-the-know	+	15	16	-	17	12
Systematic	+	14	13	-	18	17
Dependable	+	21	21	-	14	13
Exacting	+	9	16	-	21	12
Intellectual	+	23	23	-	21	17
Alert	+	22	15	-	15	13
Above average	+	14	14	-	19	12
Productive	+	18	13	-	18	17
A Thinker	+	16	19	-	20	14
Ambitious	+	16	19	-	18	13
Contented	+	20	20	-	12	12
An achiever	+	20	13	-	19	18
A planner	+	17	17	-	21	17
Competent	+	20	19	-	16	13
Teachable	+	23	20	-	6	17
Efficient	+	17	17	-	18	17
Reliable	+	20	20	-	15	15
Serious	+	18	15	-	17	13
Inefficient	-	23	19	+	9	14
Uninterested	-	21	21	+	8	15
Different	-	22	22	+	8	7

Appendix F (Con't)
Responses of Teachers and Student to the Significant Items of the Word Rating List

	Direction given the item by criterion groups.	Number of teacher responses which are in the same direction as the criterion groups.	Number of teacher responses which are in the same direction as the student responses.	Direction given the item by criterion groups.	Number of teacher responses which are in the same direction as criterion groups.	Number of teacher responses which are in the same direction as the responses made by their students.
Rebellious	-	23	21	+	3	20
Nervous	-	20	20	+	4	15
Reckless	-	23	23	+	2	18
Procrastinator	-	23	23	+	9	12
Lazy	-	23	23	+	6	14
Stubborn	-	24	24	+	3	18
Carefree	-	16	14	+	11	10
Inconsistent	-	23	23	+	4	19
Impatient	-	22	22	+	2	5
Passive	-	21	20	+	7	12
Easily distracted	-	20	20	+	12	11
Mean		17.40	18.64		14.00	13.48

A + direction indicates a response of "usually" or "always". A - direction a response of "sometimes" or "never".