THE RELATIONSHIP BETWEEN COLLEGE ACADEMIC PERFORMANCE AND EXPECTANCIES (Abstract)

William Edward Clarke

Two questionnaires were developed by the investigator for the purpose of assessing the academic expectancies held for selected freshman, male college students by certain individuals and groups of individuals assumed to be significant others for the students. A ten item, multiple-choice Student Questionnaire was designed to determine a student's perception of the academic expectancies held for him by members of his home and home community group; and, a Peer Group Questionnaire was designed as a rating form upon which a rating of the academic motivations of a student's university peer group could be made.

Complete questionnaire data were available for 836 freshman residents of men's residence halls at Michigan State University during the 1957-1958 school year. The total sample was composed of 369 non-probationary students whose grade-point-averages during their freshman year were consistently 2.00 or higher, 340 probationary students whose grade-point-averages were consistently below 2.00, and 127 raisers whose grade-point-averages for the fall term were below 2.00 but whose cumulative grade-point-averages for the full year were 2.00 or higher.

The Student Questionnaires were distributed by residence hall assistants during the spring term and each student completed the questionnaire privately. The separate items on

the questionnaire dealt with the student's perception of the attitudes and feelings of his parents, high school friends, high school staff members, relatives, and neighbors regarding his going to college and success at college. The residence hall assistants completed the Peer Group Questionnaire by rating a given student's university peer group as either highly academically motivated or poorly academically motivated.

Normative comparisons were made between the three groups of students with respect to their responses to the Student Questionnaire and with respect to the ratings of their peer groups made by the residence hall assistants.

Analysis of the data revealed that probationers and non-probationers were significantly differentiated with respect to each of the ten items on the Student Questionnaire as well as the total expectancy score derived from the Student Questionnaire. Probationers and raisers were significantly differentiated with respect to the total expectancy score, but only three of the ten Student Questionnaire items were found to differentiate these groups significantly. The ratings of the students' peer groups which were made by the residence hall assistants significantly differentiated probationers from non-probationers and probationers from raisers. Throughout the study, however, the observed differences between probationers and non-probationers were systematically greater than the differences between probationers and raisers.

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W. E. C.

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CHAPTER I

FORMULATION AND DEFINITION OF THE PROBLEM

This study dealt with an analysis of selected Michigan State University freshmen who were placed on academic probation at the end of fall term, 1957. Comparisons were made between those probationary students who persisted as probationers throughout the year and students who were never placed on academic probation during their freshman year. Comparisons were also made between those probationary students who improved their grades sufficiently to be removed from academic probation by the end of the year and those who persisted on probation.

The groups were compared with respect to (1) their perception of the academic expectancies held for them by members of their home and home community groups, and (2) the academic expectancies held for them by members of their university peer groups. Expectancy data were collected by the use of two questionnaires developed by the investigator.

The home and home community expectancies were assessed through the use of a questionnaire administered to the students. The peer group expectancies were obtained from ratings made by resident assistants assigned to the personnel staffs of the men's residence halls.

It was hypothesized that there would be a positive relationship between the academic expectancies held for a

student and his academic performance. The basic hypotheses of the study were tested by comparing the students' responses to the questionnaires with their academic performance and by comparing the peer group ratings made by the resident assistants with the students' academic performance.

Definition and Clarification of Terms

Probationers. The word probationers was used to describe those students who were placed on academic probation at the end of the fall term and persisted on probation throughout the year. In general, their grades fell below "C" or 2.00 grade-point-average.

Non-Probationers. Non-probationers were students whose grades were consistently above 2.00 grade-point-average. They were never placed on academic probation.

Raisers. For want of a better term, the term "raisers" was applied to those students who, at the end of fall term, were placed on academic probation but improved their cumulative grade-point-average to 2.00 or higher by the end of the year.

Expectancies. Expectancies were considered to be a product of the attitudes and feelings which individuals or groups of individuals have with respect to the behavior of another person. They are communicated to the other person through subtleties of language and association and

observation. Expectancies, as the term was used in this study, involve some valuing of certain forms of behavior in terms of relative goodness, badness or appropriateness. Moreover, it is a person's knowledge of a given individual's attitudes about his behavior and the meanings which the person attaches to those attitudes which are important.

Academic Expectancies. The expectancies which individuals hold for others with respect to the importance, necessity, or appropriateness of the other person's attending and succeeding in an educational institution were called academic expectancies.

Scholastic Aptitude. Scholastic aptitude was used as a more appropriate term for what is typically called intelligence. Tests of scholastic aptitude purport to measure a student's general ability to do school work.

Resident Assistant. The resident assistants who participated in the study were student assistants employed as members of the residence hall advisory staff. Each resident assistant had the direct responsibility for the supervision and advisement of approximately 50 students who resided on a given floor or wing of a men's residence hall. He resided on the same floor or wing as the students he served.

Precinct. The term precinct was used to describe a subdivision of a residence hall presided over by a resident assistant. A precinct housed approximately 50 students and

was confined to one floor or wing of the hall.

Theoretical Framework of the Problem and Basic Hypotheses

In order to give direction to the study, it was essential that some consideration be given to a theoretical framework within which the various aspects of the study could be viewed.

This study was about students--students who were enrolled in a major, middlewestern, state supported, land-grant university. The particular students who were of concern were those who encountered academic difficulty during their freshman year and, as a result, were placed on academic probation. It was believed that there were determinable differences that existed between probationary and non-probationary students. Similarly, it was believed that among the probationary students there were certain significant differences that operated to determine the likelihood of a student's being removed from probation at some later time.

Of primary importance was the fact that grade-point-average was used as a criterion for the original definition of the groups involved in the study. Students with poor grades were placed on academic probation. Others, with better grades, avoided probation. Some, during the course of their probation, improved their grades and were removed

from probation. Some of the questions raised in the mind of the investigator were: What does the grade-point-average mean? What are the factors that influence it? Can it be said that some students are predisposed to earn low grades and others higher grades? What factors are involved which enable a student to improve his grades to an acceptable level once he has been placed on academic probation? Although it would be impossible to answer all these questions in their entirety, it was felt the theoretical approach developed for this study might provide new insights into the problem.

While this study may be regarded as purely a study about students, this approach falls short of the investigator's intentions. The study is better described as a study of human behavior. When a student comes to the university he exhibits many different behaviors. He eats; he sleeps; he studies; he goes to classes; he takes examinations; and he engages in a multitude of social interactions with individuals and groups. Some students get higher grades than others; and some perform so poorly academically that they are asked to withdraw from the university. Other students are suspended for disciplinary offenses. In this context no distinction is made between "academic" behavior and other types of behavior. Behavior is viewed simply as a phenomenon characteristic of the human organism.

As we consider the various behaviors that students exhibit, we immediately begin to speculate upon what causes these behaviors. It may be hypothesized that, taken in the aggregate, the various behaviors exhibited by a college student may be attributed, at least, in part, to the set of expectancies held for him by certain significant individuals and groups of individuals in his life to whom he looks for sanction and validation of his behavior. These "significant others", as they have been called, are the persons in whom the student places confidence; he respects their opinions; he may like them or fear them; but he strives to be accepted by them and to please them.

In analyzing the role that expectancies might play in determining behavior it is important to consider the sources of these expectancies. Two groups of significant others may be considered as primary sources of expectancies for university students. The first group is the home and home community group. The second is the peer group at the university. No doubt there are many individuals and other groups of individuals whose expectancies for a particular student could be studied; but, for purposes of this study we have considered the two groups mentioned as being of particular relevance.

It may be hypothesized that if a student comes from a home and home community background where a premium is placed on higher education, he is more likely to be successful

academically than a student who does not come from such a background. If a student comes to the university with the knowledge that there are people back home who are expecting him to perform at a high level academically, it is reasonable to suspect that this will have a positive influence in determining the attention he gives to his course work. On the other hand, the student who comes to the university without such a set of expectancies being held for him may have had a major source of motivation removed, and the removal of this factor may be enough to materially influence his grades in a negative direction.

A second group of significant others whose expectancies of the student may be important in determining his academic behavior is the peer group he is associated with at the university. For the students considered in this study, this group included roommates and friends who lived in close proximity in the same residence hall. Again it may be hypothesized that if a student is involved with a peer group that places a premium on conscientious study this will influence his grades in a positive direction. And similarly, if the peer group is the kind that values a lot of things more highly than studying this may have its effect in a negative direction as far as his grades are concerned.

In summary, then, it may be hypothesized that information about the expectancies and values held by the significant others in a student's life may provide insight

into his academic behavior as well as any other type of behavior he may exhibit. In addition, for purposes of this study, two groups of individuals were identified who may be regarded as significant others for the majority of students, namely the home and home community group and the university peer group. It was felt that information about the expectancies held by those two groups for a given student would be particularly relevant in attempting to explain his academic behavior.

Stated in positive hypothesis form, the four basic hypotheses tested in this study were:

(1) There is a positive relationship between a student's academic performance and the academic expectancies held for him by the significant others in his home and home community group;

(2) There is a positive relationship between a student's academic performance and the academic expectancies held for him by the significant others in his peer group at the university;

(3) There is a positive relationship between a student's potential for being removed from academic probation and his perception of the academic expectancies held for him by the significant others in his home and home community group; and

(4) There is a positive relationship between

a student's potential for being removed from academic probation and the academic expectancies held for him by the significant others in his peer group at the university.

Hypotheses (3) and (4) are essentially corollaries of hypotheses (1) and (2) but may involve somewhat different dynamics. In any event, it was felt they should be tested separately.

Importance of the Problem

Working with students who have academic difficulties is a responsibility which confronts almost everyone working in a university. Instructors, deans, counselors, and residence hall personnel workers spend a considerable portion of their time trying to help students overcome academic deficiencies. In many instances these efforts are in vain. Perhaps the problem is lack of time or lack of meaningful information about students. Perhaps it is the inability of the counselor or instructor to see the student's problem as it really is or to take into account the student's value system. It is quite possible that a lot of time is spent working with students who might be better off both psychologically and sociologically if they were not enrolled in college at all, but engaged in some more satisfying occupation elsewhere. Conceivably many probationary students

will later succeed regardless of any efforts to help them. Answers to the questions implied here are needed if we are to develop realistic programs of assistance to probationary students. It was the purpose of this study to attempt to discover some of those answers by investigating the relationship between the academic expectancies held for a student and his academic performance.

Most of the research on academic performance among university students reported to date has dealt with predicting grades from scores on tests of scholastic aptitude and other standardized instruments. Studies are also reported which have related "non-intellectual" factors such as personality characteristics to academic success. Attention has been attracted to the importance of first term's and first year's grades in predicting future academic progress. However, little research has been reported which relates academic performance to the social dimensions which were prescribed for this study. Previous studies have shown that scores on tests of scholastic aptitude typically fall short of precise prediction of academic performance. The explanation has been that other factors operate which limit accurate prediction from one or even a battery of standardized tests. The investigation of some of these "other factors" provided the justification for the present study.

Scope of the Study

The study was restricted to freshman, male residents of men's residence halls at Michigan State University and an investigation spanning the first three terms of university study for these men. This limitation in scope was planned purposefully for the following reasons:

(1) The university policy requiring all freshmen (except commuters) to live in university residence halls;

(2) The availability of data concerning residents of men's residence halls;

(3) The assistance in conducting the study which could be given by the advisory staffs of the men's residence halls;

(4) The high degree of interest shown in such a study by administrative officials responsible for the personnel program in the men's residence halls; and

(5) The necessity of imposing realistic boundaries in order to keep the study within manageable proportions from the standpoint of size of population and time factors.

Limitations of the Study

It is evident from the outset that any research dealing with human behavior is subject to certain inherent

weaknesses and uncertainties. Furthermore, the scope of this study, as defined in another section, necessarily imposed its own limitations on the general applicability of the findings. As a result of these factors, the following limitations of the study are noted:

(1) The students under consideration in this study were freshman male residents of men's residence halls at Michigan State University during the 1957-1958 school year. Thus the findings are directly applicable only to this population. Any generalization of the findings to other populations must be made with caution;

(2) Grade-point-average was the determining factor in academic probation and, as such, was subject to the known lack of objectivity in the granting of grades; and

(3) Certain data were gathered by the use of questionnaires developed by the investigator and were subject to the usual limitations of imperfect reliability and validity.

Organization of the Study

This thesis is divided into five chapters. In Chapter I the problem is defined and presented in a theoretical framework. In Chapter II the theoretical background is

presented from the literature of social psychology and a report made of related research. The methods and procedures used in the study are reported in Chapter III. Reliability and validity studies of the instruments are also included in Chapter III. The analysis of the data is presented in Chapter IV. In Chapter V the study is summarized and the significant findings and conclusions are reported.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Behavior is caused. Moreover, as Prescott (40) puts it, "the causes of behavior are multiple, interrelated, and complex." That these two statements are axiomatic is attested to by the volume of literature dealing with the subject of human behavior. Hardly ever have so many written so much about a common problem--the explanation of why people behave as they do. Philosophers have approached the problem. Psychologists, sociologists, and anthropologists have attacked the problem scientifically, each from his own point of view. Today we have the social psychologist pondering, hypothesizing, and studying the complexities of human behavior.

The social psychologist, as an "emergent form" of scientist has certain advantages over his predecessors. He has the laboratory and the experiment with which to test his hypotheses. Thus, he exceeds the philosopher in his presentation of evidence supporting (or negating) his convictions. He has at his disposal the body of knowledge already accumulated by traditional psychologists and social scientists. Thus, he is free to select from what commonality does exist in the various disciplines only those considerations which help integrate theories of behavior and assist in the development of new, unified explanations of human behavior.

The social psychologist has yet another distinct advantage over his predecessors--as well as some of his contemporaries. He can explain himself! That is, the emergence of the "social psychologist" over the last half century is readily explained by the application of social psychological principles. The social psychologist will argue that the human organism acquires most of its characteristics through interaction with other human organisms. Through a process of communication predicated upon common knowledge of certain significant symbols, human beings acquire many strikingly similar characteristics, attitudes, and behaviors. Furthermore, the extent of similarity depends upon the quality of communication which takes place, which, in turn, depends on the opportunity to communicate. Certainly the opportunity for communication between the philosophical, psychological, and sociological disciplines has been present, particularly since the advent of mass media of communication and rapid transportation. Therefore, it is not at all surprising that philosophers are observed acting like psychologists and sociologists; psychologists have ventured into philosophy and sociology; and sociologists have taken on some of the attitudes of philosophers and psychologists. The outcome of it all is the very emergence of the social psychologist, who proceeds to study human behavior from an inter-disciplinary frame of reference. In discussing the discipline of the social psychologist, Newcomb (35:7) comments: "Social

psychology leans heavily upon contributions from the neighboring disciplines of individual psychology, sociology and cultural anthropology."

The foregoing "explanation of the social psychologist" may be an over-simplification of the dynamics of the situation and it doesn't explain why everyone in society isn't a social psychologist, but it is indicative of the social psychological point of view which has emerged in recent years as a new approach to the study of human behavior. It should also be added that the present writer is not certain that social psychologists would subscribe to his "explanation of their behavior" or that, in their pre-occupation with explaining other people's behavior, they would even attempt to turn their principles on themselves. Nevertheless, in the opinion of this writer, the sheer existence of the social psychologist in society today gives testimony and lends credence to the principles to which they claim to adhere.

Some of the principles of social psychology are presented in this chapter as a theoretical background for the present study. Adaptation of the theoretical background to the educational setting is attempted and examples of educational research related to the study are presented.

Social Psychological Foundations of Human Behavior

It would be impossible to cite all the contributors to social psychological theory. Perhaps, the best that can be done is to present selected examples from the writings of a few authors which demonstrate basic principles.

A convenient starting point is found in the contributions of George H. Mead and John Dewey. From 1900 on, Mead devoted his life to the development and elaboration of a theory of intelligence and mind. During the same period, John Dewey was actively engaged in attempts to place the educative process in a social perspective and thus enhance the effectiveness of formal education as practiced in schools. Morris (31:x-xi), contrasts the work of Mead and Dewey thusly: "The work of Mead and Dewey is in many respects complimentary, and so far as I know, never in significant opposition . . . If Dewey gives range and vision, Mead gave analytical depth and scientific precision."

George H. Mead. Let us now consider some of the thinking of Mead. He stood in opposition to the then prevalent theories of mind and self which did not explain how minds and selves arose within conduct. Quoting Morris (31: xiv) again:

> This criticism breaks into two parts: (1) they all in some sense presupposed antecedently existent minds or selves to get the social process under way; (2) even in respect to the phases of mind or self

> which they did attempt to account for socially, they failed to indicate the mechanism involved.

Mead's "social behaviorism" in contrast to Watsonian behaviorism begins with the society and not with the individual. The organism is born into a society, a presently existing and on-going society. It is the influence of the social group on the individual that determines what its responses will be and the direction its behavior will take. Minds and selves are essentially social products facilitated by physiological mechanisms. Quoting Mead (29:2) exactly:

> Individual experience and behavior is, of course, basic to social experience and behavior: the processes and mechanisms of the latter (including those which are essential to the origin and existence of minds and selves) are dependent physiologically upon the processes and mechanisms of the former, and upon the social functioning of these.

Thus we see Mead's attempt to bridge the gap between Watsonian "individual behaviorism" and his own "social behaviorism".

Mead accepted Wundt's conceptualization of the term, gesture, as the beginning of the social act which provides stimulus to other forms involved in the same social act. He extended the idea of gesture to include the notion that gestures among human forms have meanings, ideas, or attitudes attached to them which bring about the adjustment of the responses of the different forms involved in the social process. He extended the concept a step further by

suggesting "that the gestures mean these attitudes on the part of the form, that is, they have that meaning for us." (29:45) (underscore added by present writer)

In contrast to animal forms, whose gestures elicit certain instinctive responses in each other, the gestures of the human form provide symbols which answer to "meaning in the experience of the first individual and call out that meaning in the second individual. Where the gesture reaches that situation it has become what we call 'language'. It is now a significant symbol and it signifies a certain meaning." (29:46)

Without elaborating more fully here on the content of gestures and significant symbols, suffice it to add Mead's summary statement. "Only in terms of gestures as significant symbols is the existence of mind or intelligence possible; for only in terms of gestures which are significant symbols can thinking . . . take place." (29:47)

The concept, gesture, includes the possibility of vocal gestures and thus we have the origin of spoken language. "What language seems to carry is a set of symbols answering to certain content which is measurable identical in the experience of the different individuals." (29:54) Mead notes the point that when one makes use of a vocal gesture he tends to respond to it. That is, it calls out in him the same response that it calls out in others. Thus, only those vocal gestures of the child are retained which call out a response

in him which is like the response he calls out in others; "consequently, giving greater weight to those responses than to the other responses, and gradually building up those sets of responses into a dominant whole." (29:66) Infantile babbling which may call out a response in the infant, but which is ineffective in calling out the same response in adults, soon gives way to more articulate vocalization, depending, of course, on the extent to which the child finds vocal gestures which call out in others the same responses which are called out in him.

Mead summarizes his conception of the mind in the following paragraphs:

> We must regard mind, then, as arising and developing within the social process, within the empirical matrix of social interaction . . . The processes of experience which the human brain makes possible are made possible only for a group of interacting individuals . . . not for the individual organism in isolation from other individual organisms. (29:33)

Regarding the emergence of the mind he states:

> Mind arises in the social process only when that process as a whole enters into, or is present in, the experience of any one of the individuals involved in that process. When this occurs the individual becomes self-conscious and has a mind . . . (29:134)

He states further:

> It is by means of reflexiveness--the turning back of the experience of the individual upon himself--that the whole social process is brought into

> the experience of the individuals involved in it; it is by such means, which enable the individual to take the attitude of the other toward himself, that the individual is able consciously to adjust himself to that process . . . (29:134)

And finally: "Reflexiveness, then, is the essential condition, within the social process, for the development of the mind." (29:134)

Regarding the self, Mead says, "the self is something which has a development; it is not initially there, at birth, but arises in the process of social experience . . ." (29: 135). He distinguishes between the self and the body in that the self "is an object to itself". The very word, "self", is a reflexive and indicates that it can be both subject and object. The individual experiences himself indirectly from the standpoints of other individuals of the same social group. He enters his own experience as a self only insofar as he first becomes an object to himself just as other individuals are objects to him and "he becomes an object to himself only by taking the attitudes of other individuals toward himself within a social environment of experience and behavior in which both he and they are involved." (29:138) In this situation, communication becomes a form of behavior which enables the individual to become an object to himself. It is where one responds "to that which he addresses to another and where that response of his own becomes a part of his own conduct, where he not only hears himself but

responds to himself . . . that we have behavior in which the individuals become objects to themselves." (29:139)

The organized community or social group in which the individual finds himself was termed the "generalized other" by Mead. Speaking of the generalized other, he states:

> It is in the form of the generalized other that the social process influences the behavior of the individuals in it . . . for it is in this form that the social process or community enters into the individual's thinking. In abstract thought the individual takes the attitude of the generalized other towards himself . . . and in concrete thought he takes that attitude insofar as it is expressed in the attitudes towards his behavior of those other individuals with whom he is involved in the given social situation or act. (29:155-156)

In summary, Mead concludes: "The self-conscious individual, then, takes or assumes the organized social attitudes of the social group or community to which he belongs . . . (and) he governs his conduct accordingly." (29:156) And further:

> The self reaches its full development by organizing these individual attitudes of others into the organized social or group attitudes, and by thus becoming an individual reflection of the general systematic pattern of social or group behavior in which it and others are all involved. (29:158)

Thus we have, in a highly abbreviated form, the thoughts of George H. Mead regarding the emergence of mind and self, through language, and the impact of the social group as a determinant of individual human behavior.

John Dewey. As has been previously indicated, John

Dewey's contribution to social psychological thought was expressed in terms of its implications for education. He saw education as a social function carried on in a social environment. Like Mead, he was a social behaviorist. He was concerned with the "way in which a social group brings its immature members into its own social form." (13:12) His general answer to the question was:

> By means of the action of the environment in calling out certain responses. The required beliefs cannot be hammered in; the needed attitudes cannot be plastered on. But the particular environment in which an individual exists leads him to see and feel one thing rather than another; it leads him to have certain plans in order that he may act successfully with others; it strengthens some beliefs and weakens others as a condition of winning the approval of others. Thus it gradually produces in him a certain system of behavior, a certain disposition of action. (13:13)

In discussing the impact of the expectations of others for the individual, Dewey states:

> A being whose activities are associated with others has a social environment. What he does and what he can do depend upon the expectations of others. A being connected with other beings cannot perform his own activities without taking the activities of others into account. For they are the indispensable conditions of the realization of his tendencies. (13:14)

Dewey stresses the importance of group members' having shared experiences and cites language as the chief facilitator of sharing as well as being a product of shared experience itself. His explanation of the development of

language is essentially the same as Mead's. He summarizes his discussion thusly: "The bare fact that language consists of sounds which are mutually intelligible is enough of itself to show that its meaning depends upon connection with a shared experience." (13:18)

Dewey denounces the theory that the social control of individuals arises from an innate tendency of humans to imitate and thus conform. "But imitation throws no light on why they act so; it repeats the fact as an explanation of itself . . . This social fact (imitation) is then taken for a psychological force, which produced the likeness." (13:41) In discussing the wide variation in customs among social groups he says:

> The mere fact that customs are different means that the actual stimuli to behavior are different. (There is no need to appeal to imitation as an explanation.) Conscious instruction plays a part; prior approvals and disapprovals have a large influence. Still more effective is the fact that unless an individual acts in the way current in his group, he is literally out of it. He can associate with others on intimate and equal terms only by behaving in the way in which they behave. The pressure that comes from the fact that one is let into the group action by acting one way and shut out of it by acting in another way is unremitting. (13:41-42)

Dewey's concern was that the processes of instruction in school be unified in that they concentrate on the production of good habits of thinking. The necessary conditions for effective, democratic instruction were simply put and derived from a social psychological base.

> They are first that the pupil have a genuine situation in which he is interested for its own sake; secondly, that a genuine problem develop within this situation as a stimulus to thought; third, that he possess the information and make the observations needed to deal with it; fourth, that a suggested solution occur to him which he shall be responsible for developing in an orderly way; fifth, that he have the opportunity and occasion to test his ideas by application, to make their meaning clear and to discover for himself their validity. (13:192)

That Dewey and Mead subscribed to the same basic orientation is clear. Philosophically they were both pragmatists; psychologically they were both social behaviorists. They were close friends. As Morris (31:xi) puts it: "A natural division of labor at a common task was the result." Dewey's contribution was through the medium of educational philosophy and psychology and Mead's contribution has been described as a landmark of social psychology.

Contemporary Authors. Many writers have amplified and refined the basic foundations of mind and self which Mead laid down. An example is a statement regarding the feelings of security of the individual made by Kimball Young.

> It (security) begins with the social act involving the child and the mother, and in time it includes relations with the father, the siblings, other relatives, playmates, neighbors, teachers and other adults. The source of security arises from the consistency of the reactions of others towards the child, which he, in turn, introjects and uses as a basis for defining his own role and hence for determining his actions and attitudes toward himself and others. Self-assurance, self-reliance, and self esteem--three basic components of the self--depend for their origin and continuance upon the ability to meet demands defined at first by others and later by ourselves in advance. (55:42)

Gardner Murphy (33:479) offers a simpler view of self:

> . . . There is an organism, which among its many functions includes the function of observing and knowing . . . Being a more or less integrated system of responses, the organism appropriately orders these diverse impressions into an integrated whole and agrees to call it by the name which others have given to it . . . From the diverse knowing and thinking processes a conceptual unity is deduced. The self is a thing perceived . . . conceived . . . responded to. It comes gradually into being as the process of differentiation goes on within the perceptual field.

Murphy discusses the process of identification by which the self is integrated or gains unity.

> . . . Selfhood is interwoven with experiencing other individuals. As fast and as deeply as (mother), father, brother, sister make their impression upon the child, they become parts of him too. This dependence of self upon the perception of others is a primary clue to the social nature of man and to his utter incapacity for any complete autonomy of either perception or action . . . Man reacts not only to the behavior of others but to their thoughts regarding himself. (33: 491-492)

Newcomb (35:5-7) paraphrases Mead thusly: ". . . every human infant enters a society that is already a going concern . . . In the process of social interaction . . . people perceive and respond to one another and are themselves changed in so doing."

Newcomb makes a fine distinction between the reference groups and membership groups of an individual. Membership groups are simply groups to which a person is recognized by others as belonging; while reference groups are those groups

whose norms affect his attitudes and behavior.

> All membership groups probably serve as reference groups to some degree and in some ways. But not all reference groups are membership groups; most of us are influenced by the norms of some groups in which we are not recognized by others as belonging. (35:224)

The inter-relation of position and role are discussed by Newcomb (35:28). "The ways of behaving which are expected of any individual who occupies a certain position constitute the role associated with that position."

Linton (26:77) extends the meaning of the word, position, by substituting the word "status". By status he means "the place in a particular system which a certain individual occupies at a particular time . . ." In this context, the "particular system" may be the family group or any of a number of "association groups" including age-sex groups, friendship groups, or work groups. The association groups or, for that matter, the family groups, through adoption or marriage, may change with time. A person's role, then, becomes "the sum total of the culture patterns associated with a particular status. It thus includes the attitudes, values and behavior ascribed by the society to any and all persons occupying this status." (26:77)

It is interesting to note Newcomb's use of the generic term, "reference group", to denote the dynamic qualities of Linton's family group and association groups.

Tolman (49:350) provides a psychological model for

analyzing the matter of status and expected roles. He conceptualizes role thusly:

> A role is thus a series of appropriate and expected ways of behaving relative to certain objects, by virtue of a given individual's status in a given social structure or institution.
>
> Further, these expectations that individuals in a given status will behave in such and such ways are called role expectations. This term has a double meaning. It applies not only to the expectations of the alters . . . that ego will behave in certain ways but it applies as well to the expectations of ego that if he behaves in these expected ways, the alters will meet his behavior with approval . . .

Talcott Parsons and Edward Shils (36:190-191) comment along the same line of thought:

> The primary ingredients of the role is the role-expectation . . . Role-expectations organize (in accordance with general value-orientations) the reciprocities, expectations, and responses to those expectations, in the specific interaction systems of ego and one or more alters . . . It is in this reciprocity or complimentarity that sanctions enter and acquire their place in systems of action.
>
> . . . . . .
>
> Insofar as ego's set of role-expectations is institutionalized, the sanctions which express the role-expectations of the other actors (alters) will tend to reinforce his own need-dispositions to conform with these expectations by rewarding it and by punishing deviance.

Cottrell (10) offers a list of sixteen basic propositions concerning inter-personal behavior. Slightly abbreviated, a few are reproduced here which indicate the general tone of the complete listing.

I. When human organisms respond to each other over a period of time, the activity of each becomes the stimulus pattern for a more or less stabilized response pattern in the other (s) . . .

II. . . . each member of an inter-personal relationship . . . is conditioned to respond to his own response series as a stimulus series . . .

III. The impact upon one human organism, A, of the activities of another, B, . . . conditions in A the response pattern of B to A as A has perceived that action . . .

IV. The self-other patterns of each member of an interact system are frequently not congruent. The more intimate the contact through time, the greater will be the tendency for the patterns to coincide.

. . . . . .

X. The personality system includes self-other patterns developed by other persons and acquired through the process of identification.

. . . . . .

XIV. The person responds in a social situation according to his own definition of the situation.

Simon (45) has developed a mathematical model for translating the behavior of group members into mathematical language. His formulas require four variables; (1) the intensity of interaction among members; (2) the level of friendliness among them; (3) the amount of activity carried on by members of the group; and (4) the amount of activity imposed on the group by the external environment. A formidable group of equations is the result, which according to Simon, "help in the clarification of concepts . . . and the derivation of new propositions . . ."

Snygg and Combs (46:15) present the most adamant and unequivocable view of the determinants of human behavior

encountered by this writer. They say, "All behavior, without exception, is completely determined by and pertinent to the phenomenal field of the behaving organism." In this context, the "phenomenal field" means "the entire universe, including himself, as it is experienced by the individual at the instant of action."

The "phenomenal self", as Snygg and Combs refer to it, is a product of the phenomenal field of a person and includes that portion of the field which has a personal referent, that is, has a special reference to self. Furthermore, it is the phenomenal self that is of prime importance in determining the majority of an individual's behaviors. The phenomenal self is not thought of as an entity or object, but as "a pure abstraction created for convenience and understanding." (46: 57)

The basic human need is defined as "the preservation and enhancement of the phenomenal self . . . When each act is seen as an attempt to preserve or to fortify the individual's concept of himself, behavior becomes meaningful." (46:58)

Thus, the tendency of individuals to identify with groups is explained in terms of need satisfaction. The following principles laid down by Snygg and Combs are relevant to this point:

> (1) Individuals tend to seek self enhancement through identifying themselves with and winning the approval of groups or individuals they believe to be important.
> (2) People tend to withdraw from groups whose approval they are unable to win and from groups which no longer satisfy their needs.
> (3) Identification of an individual with a group leads him to adopt and defend the standards and behavior of the group. (46:187-188)

Cartwright and Zander (8) discuss in detail the questions of group cohesiveness, group pressures, and group standards in their volume, Group Dynamics. In general their thesis is that group membership provides a source of need satisfaction for group members and that persons will remain in or leave a given group depending upon the satisfactions they derive. The original motivation for becoming identified with a group may be any of a number of reasons all related to need satisfaction. Speaking of groups in general, they say:

> . . . attraction to the group will depend upon two sets of conditions: (a) such properties of the group as its goals, programs, size, type of organization, and position in the community; and (b) the needs of the person for affiliation, recognition, security and other things which can be mediated by groups. Both the nature of the groups and the motivational state of the persons must be treated in any adequate formulation of group cohesiveness. (8:76)

Once a person has become identified with a group, however, he is immediately subject to group pressures and group standards. If he is to remain in the group, some of his previously held values which may be at variance with

major group values must give way to acceptance of group values. Otherwise, he is likely to be rejected by the group and its attractiveness for him diminished. Thus, the source of his need satisfaction which originally prompted him to identify with the group is curtailed and withdrawal from the group in search of another is his only recourse.

After noting certain research findings relative to conformity among group members, Cartwright and Zander cite the following as plausible explanations:

> (a) Membership in a group determines for an individual many of the things he will learn, see, do, think about, and so on. The nature of the stimuli in the environment of a person are in large part affected by his group membership.
> (b) An individual may act like others in the group because they are attractive to him and he wants to be like them.
> (c) A person may behave in a manner similar to the rest of the group because he fears punishment, ridicule, or rejection by members of the group unless he does act as they do. (8:139)

With slight modification, Cartwright and Zander have stated one of the major hypotheses of the present study:

> Among college students . . . the "eager beaver" is reminded that "a C is a gentleman"s grade." In this fashion average students indicate to the honor scholar that his behavior is too different from theirs to be acceptable, despite their professor's hopes in the matter. (8:137)

Yoshino (54) concluded, after a study of college dropouts, that despite differences in high school rank and scholastic aptitude scores, "there are socio-economic and

motivational factors that must be taken into consideration in accounting for the success or failure of any given student."

Combs (9) approaches the problem of school learning by focusing on the concept "intelligence". Intelligence is thought of as the effectiveness of a person's behavior rather than an inborn organic quality. Since effectiveness of behavior is determined by the perceptions a person is able to make, intelligence becomes a function of the adequacy of "the perceptions that he can make in his own unique perceptive field". The limitations on the development of intelligence, then, become synonomous with the limiting factors upon the perceptions of individuals.

Limiting factors on perception include certain physical conditions such as pre-natal or congenital damage or malformation of the organs of the nervous system; environmental deprivement or lack of opportunity to make perceptions and thus increase differentiation in the perceptive field; lack of time to build new perceptions; depressed levels of an individual's goals or values; inadequate self-concept or inability to see one's self as capable of achievement; narrowing of the perceptual field due to perceived threat to the individual; and the draining off of energy in defense of the self under threat.

Combs does not suggest that physiological limits do not exist in respect to intelligence, but he is suggesting

"that we may have conceded too early that we had approached those limits." The implications of this conception of intelligence, particularly for schools are "(a) to free individuals from the restraints upon perception and (b) to provide the opportunities for perception to occur."

Several provocative questions relevant to educational practices are raised by Combs. A few are reproduced here:

> What effects might we be able to produce by providing experiences that provide adequate concepts of self in children and adults? . . .
>
> What would happen if we were consciously and carefully to set about the task of providing experiences that would lead people to conceptions of themselves as adequate, worthy, self-respecting people? . . .
>
> Finally, if threat to the individual has as important effects as seem indicated in this discussion, the removal of threat would seem a most important factor to consider in the release of the individual to perceive more adequately.

Brookover (6), proceeding from a definition of education which makes education virtually synonymous with socialization, is led to analyze school learning on the same basis that social learning and behavior of all kinds is analyzed and explained. With regard to the specific role of the school as an agent of socialization, he comments:

> In addition to the social climate, which defines the general norms and conditions of behavior, and the models of behavior presented to the pupils, the school functions in socialization by defining the specific expectations of the students. In general, these expectations of the student role are primarily defined for the student by three groups: the teachers, the parents, and other students. (6:348) (underscore added by present writer)

Brookover suggests further that with a few exceptions the expectations of parents and teachers are fairly convergent with respect to the scholastic performance of elementary school children. That is, they both expect the child to learn the three R's, work hard, and stay out of "trouble". Notable exceptions occur when parents' definitions of "trouble" conflict with teachers' definitions. However, secondary school and college students, in contrast to elementary pupils, are confronted more realistically with role expectations which derive from interaction with a peer group. These expectations may be clearly in opposition to previously internalized values as well as the current desires of teachers or parents. The "curve raiser" or the "grind" may be praised by teachers and parents but condemned by his peers. The extent to which peer approval is preferred to adult approval at this stage may be a critical variable in determining scholastic performance.

In a subsequent journal article, Brookover (7) conceptualizes a social psychological basis for classroom learning. He notes the dilemma of the present-day educator who is faced with societal demands for more highly trained scientists, but at the same time has predominately "average" students to train. The panic produced by this apparently impossible task has resulted in frenzied re-organization of school curricula with primary emphasis on honors courses and large-scale programs for identification and placement of the

"gifted learners".

The educator is seen as stranded with a learning theory, derived largely from individual psychology, which assumes that the human organism is innately equipped with a fixed capacity to learn. Intelligence tests reflect this theory. Students of average IQ are assumed to be incapable of becoming research scientists and engineers.

Brookover does not deny the possibility that variation in school learning may be influenced by organic differences, but he suggests "that these organic differences have not been identified. We know, however, that human beings have a tremendous range of learning possibilities and that no one has reached the end of learning."

After considering certain assumptions and general hypotheses regarding human learning in a social context, the following specific but tentative hypotheses are suggested by Brookover:

> 1. Persons learn to behave in the ways that each considers appropriate to himself. Thus, each child and each adult learns to do those things that are viewed as proper, required, necessary and desirable by the individual . . .
> 2. Appropriateness of behavior is defined by each person through the internalization of the expectations of significant others . . .
> 3. The functional limits of one's ability to learn are determined by his self-conception or self-image as acquired in social interaction . . .
> 4. The individual learns what he believes significant others expect him to learn in the classroom and other situations . . .

Brookover summarizes the social psychological conception of school learning thusly:

> If the foregoing hypotheses are valid, the limitations we have placed upon our human resources by our conception of individual limitations on learning would be greatly expanded.
>
> . . . . . .
>
> This requires the creation of a climate of learning in schools which defines maximum achievement as the norm . . . If the educational system recognizes this and applies a social conception of learning to the school situation as we have long since done to other kinds of learning endeavors, a high level of educational achievement throughout the society may be realized.

Review of Related Research

Studies relating various factors to educational achievement have frequently involved correlations between assumed independent variables and observed, but still assumed, dependent criteria. The present study is no exception since it depends on statistical inference from population descriptions based on normative data. A danger inherent in all studies of this sort is that concomitance of events may be mistaken for causation. To be explicit: in the present study the academic performance of a student's peer group was found to be related to his own academic performance. What assurance is there that like-achievers do not naturally group together as a result of their common characteristic, like-achievement? Or, on the other hand, can like-achievement

among group members be attributed, at least in part, to some degree of pressure to conform to group standards (be they high or low) among group members?

A study relevant to these questions was conducted by Hoffman (23) in a study of small group interaction in a classroom setting. The question considered was, "do people select each other as friends because they are similar, or do they become similar because of the interactions connected with their friendships?" Groups of four persons each were assembled in seven laboratory sections in an undergraduate psychology course at the University of Michigan in 1955. The basic purpose of the grouping was to study the effects of group composition on problem solving performance, however, a partial answer to the question mentioned above was an added outcome.

On the basis of similarity or dissimilarity of personality as measured by the Guilford-Zimmerman Temperament Survey, students were assigned to homogeneous or non-homogeneous groups. The correspondence between the personality profiles of the students on the GZTS was determined by using Kendall's tau as a measure of profile correlation. Thus, homogeneous groups were formed from students whose personality profiles were positively inter-correlated and non-homogeneous groups were constituted of persons whose profile inter-correlations were zero or negative. Data on 70 students in homogeneous groups and 128 students in non-homogeneous groups were

reported. The groups worked together in class on role playing problems and case discussions and thus got to know each other. At the end of the course, a measure of group attractiveness was obtained for each member by asking him to indicate on a sociometric questionnaire the three people from the total laboratory section he would most like to be in a group with if he were to take the course over again. The frequency with which a member chose his own group members provided an index of the member's attraction to his group. The mean number of in-group preferences for the homogeneous groups was 1.49 and for the non-homogeneous groups it was 1.36 with standard deviations of approximately 1.00 in each case. The difference between the means were not significant at the .05 level. Thus, the hypothesis that similarity of personality leads to personal attraction was not supported. It was shown, however, that quality of group problem solving was greatest among homogeneous groups with high in-group preferences. No relation between in-group preferences and quality of group performance was noted for the non-homogeneous groups.

Perhaps the most provocative experiment of all which involved conformance of group members to group norms was the classic experiment conducted by Sherif (44) in 1935 at Columbia University. He utilized the autokinetic phenomenon as a medium to study the relationship of group interaction to individual perceptions. A stationary pinpoint of light, exposed for two second intervals in a dark room, was perceived

by subjects to move each time it was flashed on and off. Subjects, taken individually, were told to indicate in inches how far they thought the light had moved each time it was exposed. It was found that while there were wide variations among individuals as to their perceptions of movement, each subject soon fell into a characteristic pattern of response. That is, his perception of the movement was restricted to a range of only a few inches. When groups of two and three were simultaneously viewing the light and each one reported orally his estimate of the movement, there was a tendency for the group to begin to agree on the perceived movement and thus establish a group norm for their various estimates. Most notable, however, was the fact that groups formed from subjects who had experienced the phenomenon previously (and had established their own individual norms) were also found to converge toward a new group norm which in many instances was quite different from their original individual norms. These groups took longer to establish the group norm, but in time, the group norm was clearly established. Twenty-four hours later, the subjects were again exposed individually to the flashing light and their estimates of movement still clustered around the previously established group norms.

Subsequent experiments by various investigators have confirmed Sherif's findings. Schonbar (43) used a line length as the stimulus and found similar results. Bovard (4) found individual subjects still influenced by the group norms

28 days after the group norms were established. Rohrer, et al. (42) found the group norms to be stable after a period of one year. Bovard (5) also found that subjects who had previous class experience in a course in psychology where group discussion was emphasized shifted to a common group norm more quickly than students who had been in teacher centered classrooms. In this experiment the stimulus was a green rectangle the length of which was to be estimated by the groups.

While these studies are basically laboratory studies, they are indicative of the many studies of group cohesiveness and group conformity which have been reported. Hare, et al. (22) have summarized and reported 584 separate studies and articles which deal with interaction within small groups. The essence of these studies cannot be spelled out in a few words, but, in general, the social determinants of general human behavior are widely documented by research findings.

Studies more specifically related to the present study include investigations relating academic performance to social factors.

Haggard (21) reported in 1957 a longitudinal study of 45 children who had been studied from the time they entered the third grade until completing the seventh grade. The students were all enrolled in the Laboratory School of the University of Chicago. For the most part the children were from professional homes and many of the fathers were

university professors. Among other things, measures of parental pressure to achieve academically were studied in relation to the students' academic performance.

"By the time they had arrived in Grade III, the high general achievers (in contrast to low achievers) were sensitive and responsive to socialization pressures, had largely accepted adult values, and were striving to live up to adult expectations." They showed a higher level of overall adjustment than did the low academic achievers. By Grade VII, the high achievers continued to respond to adult standards of behavior, but "had developed strong antagonistic attitudes towards adults"--attitudes which were not expressed by the low achievers. By Grade VII, the high achievers had emerged as social leaders of their peers.

Two summary statements are particularly noteworthy.

> Our findings indicated clearly that, in the setting of this study, it is not only the parents and, to a lesser extent, the teachers who exert strong pressures on the child to achieve academically. The other children, coming from similar backgrounds, also exert strong pressures which are not openly observable but nonetheless add to the pressures imposed by adults.
>
> . . . . . .
>
> . . . Is it necessary for these parents to exert strong pressures upon their children to achieve academically. Our knowledge to date suggests that, if the parents are themselves intellectually oriented and are not ambivalent about the value of intellectuality as a way of life, the child, as a matter of course, will accept the same value system and acquire the appropriate behavior patterns.

Drews and Teahan (15) tested the hypothesis that the parents of high academic achievers are more demanding, more autocratic and less accepting in the treatment of their children than the parents of low academic achievers. Samples of 40 gifted students and 28 average IQ students were identified with gifted defined as Stanford-Binet IQ 130 or above and average defined as IQ from 93 to 120. Samples were drawn from junior high school students in Lansing, Michigan in 1957. Within the gifted and average groups, half of each group had maintained "A" averages for two previous years and were classified as high achievers. The other half of each group were classified as low achievers. Gifted low achievers had grades of "B minus" or below and average low achievers had grades of "C minus or D".

A Parental Attitude Survey was constructed using items from an instrument devised by Shoben. The instrument was administered to the mothers of the children with the following results: mothers of high achievers were more authoritarian and restrictive in the treatment of their children than the mothers of low achievers; and, the parents of gifted achievers also seemed to have more punitive attitudes in rearing their children.

In a further report on the Drews and Teahan data, Hurley (25) pointed out that while the mothers of the high academic achievers were more dominating and ignoring than the low achievers' mothers, the mothers of the intellectually

gifted group were markedly less dominating and possessive than the average children's mothers. As a result he suggests, "the interpretation that some middle degree of maternal domination has an 'optimal positive impact' upon both the intelligence and the academic success of the child does appear to be consistent with these findings."

In a survey of recent research on achievement among gifted students, Gowan (20) gleaned the following common findings which differentiate achievers from non-achievers: clearness and definiteness of academic and vocational goals; strong ego controls and strength; parents who took pains to motivate their children; some tension in tasks demanded in childhood; enthusiastic, socialized, activity oriented view of life. In contrast to the Drews and Teahan findings, Gowan found permissive parental attitudes to be associated with achievers and autocratic parental attitudes to be associated with non-achievers. In summary, Gowan states:

> Thus achievement and under achievement in the gifted may be viewed as social and asocial responses of the individual to proper stimulation . . . either tendered or denied by the parental and educational environments.

Ford (17), in a study of Kentucky junior high school students in 1956, points out the following factors found to differentiate over- and under-achievers: membership of parents in PTA; attitudes towards school; occupational ambition; perceptions of occupational ambitions held for them

by parents; and punishment and scolding received for making poor marks. Other strong factors were: marital status of parents; employment of mothers; time spent studying at home; and types of persons named as models, "ideals", or objects of admiration. Ford noted that social class differences, as such, between over- and under-achievers were not significant. He comments thusly: ". . . the chief inference which should be drawn is that explorations of social factors affecting academic achievement which fail to go beyond the mere recognition of social-class differences have been brought to a premature conclusion."

Several investigators (30, 32, 48) have studied the efficiency of the Rorschach Test as a predictor of academic achievement and found significant relationships. Sopchak (47) included the Rorschach along with other predictors in a study of the academic success of 356 Adelphi College freshmen in 1957. The students were administered the California Reading and Language Tests, and American Council on Education Psychological Examination, and the Harrower Multiple Choice Rorschach. Data on high school grades were also available. High school grades were found to correlate most highly with freshman grades (.64). ACE and California Test scores correlated from .23 to .49 with grade-point-average and Rorschach-GPA correlations ranged from -.20 to .24. Total scores, human movement responses, and small detail responses were the only Rorschach scores found to be correlated with

GPA at the .05 level of confidence out of the eleven separate Rorschach scores obtained.

Holtzman, et al. (24) have designed a Survey of Study Habits and Attitudes "to meet the need for an easily administered, valid measure of study methods, motivation for studying, and related attitudes of importance in scholastic success". Correlations from .26 to .66 between Survey scores and GPA are reported for a sample of 1756 men and 1118 women in ten different colleges which were studied in 1954.

Ahman, et al. (1) studied the validity of the Survey of Study Habits and Attitudes devised by Holtzman and colleagues. A sample of 301 male freshman at Cornell University in 1956 were administered the Survey. The correlation between Survey scores and fall grade-point-average was found to be .08. Survey scores correlated with Ohio State University Psychological Examination to the extent of .15. A group of 50 over-achievers and 46 under-achievers were identified from freshman males who enrolled in the fall of 1955. These two groups were compared with respect to their responses to each of the 36 items on the Survey. Chi-square was employed to demonstrate the significance of the observed relationships. Only two of the items were found to differentiate significantly (.05 level) between the under- and over-achievers as a group. These two items dealt with the students' interest in school work. A study of item discrimination using the total score on the Survey as the criterion resulted in

discrimination indices which were judged "satisfactory" by the investigators. Indices ranging from .40 to .60 were found for the majority of the items. In summarizing the study, the investigators concluded: "In this instance the SSHA did not display predictive validity to any noticeable degree although the test items did consistently exhibit satisfactory discriminating power (internal consistency)."

Garcia and Whigham (18), in a study of 509 Emory University freshman in 1956, reported a correlation of .25 between scores on the Brown-Holtzman Survey of Study Habits and Attitudes and grade-point-average for the freshman year. The Survey scores were also found to correlate with total scores on the American Council on Education Psychological Examination to the extent of .14. Administering the Survey later in the school year, after the students had experienced study conditions at the university, resulted in slightly higher (but not significantly) correlations with grade-point-average.

Myers and Schultz (34) devised a questionnaire which sampled motivation for attending college, intellectual interests, teacher relations, and study habits and administered it to entering freshmen at an eastern women's liberal arts college. The classes of 1951 and 1952 were chosen for study. A correlation of .10 was found between questionnaire scores and grade-point-average.

In the early 1950's, Gough (19) developed a personality

scale to predict undergraduate grades. The title of the scale was Honor-Point-Ratio Scale (Hr) and it was included in the California Psychological Inventory along with other personality scales. A mean correlation of .38 in eleven cross validating college samples totalling 1253 cases was attained. The mean correlation with scholastic aptitude scores was .26. Some of the more prominent social-interactional implications of higher and lower scorers were: "high scorers tend to be seen as capable, intelligent, and reliable and low scorers as dissatisfied, dull, rigid, and shy."

Bendig and Klugh (2) validated Gough's Hr Scale against students' self-reported grade-point-averages and found a median correlation of .32 between Hr and the criterion for four samples of approximately 100 each at the University of Pittsburgh in 1954-1955. In the same study they related scores on Taylor's Manifest Anxiety Test to grade-point-average and found no significant relationships.

Scores on the various scales of the Kuder Preference Record were correlated with the academic performance of over 400 University of Georgia male students in 1946-1947 by Phillips and Osborne (38). They found no significant relationships. Correlations ranging from -.11 to +.08 were reported. Normative comparisons between academic probationers and non-probationers likewise revealed no statistically significant differences.

Wilson (53) studied the personality characteristics of

100 Los Angeles high school students in 1947. Fifty of the students had failed two or more subjects the previous semester and fifty had never failed. The students' responses to the Thematic Apperception Test and the Bell Adjustment Inventory were used for comparing the two groups. No significant differences between the two groups were demonstrated, and it was concluded "that failure in the high school does not necessarily indicate a maladjusted personality . . ."

Bledsoe (3) related size of high school to grade-point-average for freshmen enrolled in all the state colleges and universities in the state of Georgia between 1924 and 1951. All high schools that had been accredited by the Georgia Accrediting Commission were involved in the study. He concluded, "students from Georgia high schools who are members of large graduating classes tend to make significantly higher average marks during the first year of college than do students who attended small and middle sized high schools."

DiVesta, et al. (14) devised an Orientation Inventory to be administered to students for purposes of predicting their grades. Samples of 24 and 28 respectively were identified as under-achievers or over-achievers from a population of Cornell University students in 1949. Inventory items dealing with the number of hours the students worked; ability in note taking; and satisfaction with present courses; were found to differentiate between the two groups as defined.

A study to test the hypothesis that over- and under-achievement among students is directly related to the reward value of high marks for the individual student was conducted by McDavid (28). In this study scholastic marks were viewed as some kind of external, non-objective standard which constitutes a form of interpersonal evaluation of a student by his teachers. High grades were assumed to be a form of approval on the part of the teacher for a given student's performance and, hence, a source of social reinforcement.

The Situational Interpretation Test was used to determine the effective value of approval and disapproval as reinforcers of an individual's behavior. In effect, the SIT assesses a person's psychological need for approval of his behavior. A sample of 23 over-achievers and 21 under-achievers was selected from among the juniors and seniors in a New Jersey high school in 1957. Scores on the SIT ranged from zero to eight, with the mean for under-achievers being 3.62 and the mean for the over-achievers being 5.78. The differences between the means was significant at the .001 level. Thus it was concluded that scholastic over- and under-achievement do appear to be related to a student's need for social approval as a reinforcer for his behavior. In this case the teacher's evaluation of the student, as reflected in the grades he "gives" him, was the source of assumed approval or disapproval.

Studies relating tests of scholastic aptitude or

achievement to success in school are among the most frequent forms of educational investigation. In contrast to studies of "non-intellective" factors such as those reported above, studies involving prediction of grades from standardized tests have usually shown more significant results. However, even the most rigorously designed aptitude and achievement tests have systematically fallen short of precise prediction. A few examples of research relating "intellective" factors to educational achievement of college students are presented here.

Wantman (52) in describing the procedures used at the University of Rochester for predicting academic performance in 1954, reported multiple correlations ranging from .50 to .69 using different combinations of predictors. Predictors included the ACE Psychological Examination and English, reading, and mathematics tests. In attempting to predict those students who were likely to have difficulty academically, it was found that the multiple cut-off technique worked better than multiple regression equations. The most useful single predictor was the Iowa English Placement test which correlated as high as .58 with the criterion for one entering class. Correlations of .70 to .80 were reported between freshman grades and grades earned in succeeding years. Efforts to predict grades in specific courses usually resulted in correlations around .50, seldom higher than .60.

Manuel (27) reported a series of correlations between

various scholastic aptitude tests and college grade-point-average at the University of Texas in 1955. The ACE Psychological Examination, College Ability Test, and the Word-Number Ability Test were administered to 1501 entering freshman and zero order correlations with freshman grade-point-averages computed. Correlations ranged between .45 to .61. The Word-Number total score was found to have the highest correlation with grade-point-average. Comparisons between high school grades and admissions test scores prompted Manuel to comment, "particularly puzzling are the cases where grades and test scores are widely different . . . it will be interesting to see how these students perform at the college level when their high school marks point one way and their test scores point another."

Pounds (39) conducted an extensive investigation into the predictive efficiency of certain information about students which college admissions officers have available at the time a candidate applies for admission. The study involved predicting the freshman grades of students in the Teachers College, University of Cincinnati during the years 1951-1954. The following eight factors were chosen for study as promising predictors: (1) high school rank; (2) college interview rating; (3) high school principal's rating; (4) L-score, ACE Psychological Examination; (5) Q-score, ACE Psychological Examination; (6) total-score, ACE Psychological Examination; (7) scores on the Cooperative Reading Test; and (8) scores on

the Cooperative English test, Mechanics of Expression. A total of 196 students were included in the study and all of these were enrolled in "regular" training programs, excluding such specialized programs as art education, music education, physical education and health education. It was found that including students enrolled in the "special" programs materially reduced the correlations with the criterion scores. Correlations between selected factors and grade-point-average ranged from .42 to .55. The correlation with English scores was .42; with principal's rating .45; with high school rank .47; with ACE L-score .53; and with reading test scores .55. The other factors were used in multiple regression equations. The highest multiple correlation was .65 and involved high school rank, ACE L-score, and an adjusted reading score as predictors.

The highest correlation between grade-point-average and a combination of other factors found in the present review of research was obtained by Robinson (41) at Bradley University around 1950. He found the multiple correlation between the grades of graduate students in the Department of Natural Science and a combination of undergraduate grades, science test scores, and the Miller Analogies Test to be .746. The study was based on a sample of 21 graduate students. The other correlations relating grades of graduate students to test scores were similar to the findings for undergraduates, that is, they were of the order of .50 to .60.

The theoretical background and research studies reported in this chapter have necessarily been selected from a larger volume of material, all of which could not possibly have been reported. It was felt however, that the selections included were sufficiently varied to represent an adequate sample of social psychological theory and relevant educational research.

CHAPTER III

METHODOLOGY AND PROCEDURE

The basic hypotheses tested in this study involved comparisons between three groups of students with respect to two measured criteria. The three groups of students were identified by their academic performance and were classified as probationers, non-probationers, or raisers. The two criterion measures were (1) the students' perceptions of the academic expectancies held for them by members of their home and home community group, and (2) the academic expectancies held for them by members of their university peer group. The criterion measures were obtained from questionnaires submitted to the students and ratings made by members of the residence halls personnel staff. Data relevant to the reliability and validity of the criterion measures are presented in this chapter along with a description of the general methodology.

Description of the Samples

The Original Population. The original population from which cases could be drawn included all first term freshman males residing in residence halls at Michigan State University during the fall term of 1957. Thirteen students carrying less than twelve credits were considered part-time students and were excluded from the population. Likewise students who dropped out of school during the fall term were not considered.

At the end of the fall term, there were remaining in school a total of 1341 full-time students from the original population. Of these students, 700 earned a grade-point-average of 2.00 or higher during the fall term and 641 earned a grade-point-average of less than 2.00. These 641 students were placed on academic probation by the dean of the Basic College.

The Non-Probationers. For purposes of this study, a non-probationer was defined as a student whose grade-point-average never fell below a 2.00 for any term of his freshman year. Of the original group of 700 non-probationers, 240 fell below 2.00 grade-point-average during winter or spring terms and were excluded from the sample. By the end of the year, 45 of the original group had dropped out of school. Incomplete questionnaire and test data accounted for a loss of 46 cases. Total attrition in the non-probationer group amounted to 331, leaving a final sample of 369.

The Probationers. For purposes of this study, a probationer was defined as a student who was placed on academic probation at the end of the fall term and was still on probation at the end of his freshman year. Of the original group of 641 probationers, 138 improved their grades sufficiently to be removed from probation by the end of the year. Those students were excluded from the probationer sample and reclassified as raisers. By the end of the year, 145 of the original group had dropped out of school. Incomplete questionnaire and test data accounted for a loss of 18 cases.

Total attrition in the probationer group amounted to 301, leaving a final sample of 340.

The Raisers. For purposes of this study, a raiser was defined as a student who was placed on academic probation at the end of the fall term and subsequently improved his grades sufficiently to be removed from probation by the end of the year. The raisers were derived out of the original probationer group and represented a total of 138 students. Incomplete questionnaire data accounted for a loss of 11 cases, leaving a final sample of 127.

Development of the Instruments

The Student Questionnaire. In order to test the hypotheses relating the expectancies held for a student by his home group and his academic performance, it was necessary to develop an instrument to assess quantitatively the intensity of these expectancies as perceived by the student himself. A ten item, multiple-choice questionnaire was developed for this purpose. (see Appendix)

The innocuous title, "Student Questionnaire", was selected for the instrument purely for the sake of giving it a name without connoting its true purpose. Multiple-choice type items were used in order to facilitate the analysis of the responses to each item as well as the total score on the questionnaire.

In accordance with the theoretical framework of the study, each of the ten items was designed to elicit from the student his perception of how certain significant others in his home and home community would feel about his going to college and his academic performance at college. Certainly, items dealing with all the significant others in the home community were not included on the questionnaire. However, those items which were included dealt with persons and groups which are easily identified. Furthermore, to insure maximum return, it was essential to include only those items to which it could be reasonably assumed each student could and would respond.

Of the 10 items included in the questionnaire, 4 dealt with parents; 2 dealt with friends from high school; 2 dealt with high school staff members; 1 dealt with neighbors and friends of the family; and 1 dealt with relatives. It was felt that items distributed thusly would yield adequate data for purposes of this study. A typical item on the questionnaire was:

If I did not go to college, my close friends from high school
(1) would wonder quite a bit why I did not go
(2) would wonder a little why I did not go
(3) really wouldn't wonder at all why I did not go
(4) would probably take the attitude that I was better off if I didn't go

Each of the items was constructed in such a way that the response numbered (1) was indicative of a high expectancy.

The other responses signified lowered expectancies. The total score on the questionnaire was determined by counting the number of (1) responses. Therefore, the total expectancy score represented a composite picture of a student's perception of the academic expectancies held for him by certain members of his home group. The possible range of scores was from zero to ten. Information relevant to the reliability and validity of the Student Questionnaire is presented in later sections of this chapter.

In addition to the ten items in the body of the questionnaire, two additional items were included to provide data for studying the validity of the Peer Group Questionnaire.

The Peer Group Questionnaire. In order to test the hypotheses relating the expectancies held for a student by his university peer group and his academic performance, it was necessary to develop an instrument to assess the quality of these expectancies. The Peer Group Questionnaire was developed for this purpose.

This questionnaire was a simple rating form upon which a rating of a given student's university peer group could be made. Criteria for rating the peer groups were established by the investigator and became part of the written instructions to the raters.

The raters who completed the Peer Group Questionnaire were the 68 resident assistants assigned to the eight men's residence halls. Their instructions were to develop a

composite image of the group of students a given student associated with and rate this reference group as a highly academically motivated group or as a group who seemed to be poorly motivated academically. The ratings involved checking the tendency of a given student to associate more with one type of group than the other. The Peer Group Questionnaire and the instructions to the raters are reproduced in their entirety in the appendix.

Normally it would be desirable to obtain independent ratings of the peer groups by several raters in order to get valid ratings. However, in this instance, the resident assistants were the only persons in a position to have the necessary information to make the ratings. Since one of the prime responsibilities of the resident assistants is to know the residents of their precincts well, it was felt that they were in a particularly advantageous position to make the peer group ratings and that their ratings could be relied upon. Some evidence of the validity of the peer group ratings is reported in the section on instrument validity included in a later section of the present chapter. The reliability of the ratings is also presented in a later section.

The primary assumption in the development of the Peer Group Questionnaire was that the expectancies which a group holds for its members are reflected in the major values held by the majority of the group members. If it is possible to obtain a qualitative assessment of a group's values with

respect to a given criterion, it is possible to make inferences regarding the expectancies held by the group for its members. If the assumptions hold and the ratings are accurate, then the necessary conditions for assessing the effect of the expectancies held for an individual by his peer group upon his academic performance are met.

Data Collecting Process

Shortly after the close of the fall term, 1957, the grade sheets of all full-time, first term freshman residents of the men's residence halls were inspected. The students whose grade-point-averages were 2.00 or higher were placed in one group and those whose averages were below 2.00 were placed in another group. The names of these students, their grade-point-averages, student numbers, residence halls, and precincts were transcribed to 5x8 cards, one for each student.

During the winter term, the scores obtained by the students on the orientation test battery administered to all freshmen were entered on the cards.

Early in the spring term, the grade sheets of all students in the sample were again inspected. The winter term's grades were entered on the cards and certain cards were discarded. The explanation of the attrition in the population is explained in the section describing the samples; therefore, it is not duplicated here.

Toward the middle of the spring term, the expectancy data were collected. The investigator scheduled meetings with the resident assistants and advisors of each of the eight men's residence halls. Approximately an hour was taken in each meeting to explain the purpose of the research and to enlist the co-operation of the resident assistants. Considerable time was spent answering questions and making sure the resident assistants knew exactly what was expected of them. The resident assistants were provided with a Student Questionnaire for each student remaining in the sample and a Peer Group Questionnaire. The names of the students had been entered on the questionnaires and checked for accuracy to account for the students who had changed precincts during the course of the year. During the meetings, considerable emphasis was placed on the instructions for the Peer Group Questionnaire. The resident assistants were asked if the two types of groups as described in the instructions did, in fact, exist in their precincts. There was general agreement that the two groups were identifiable and that it would not be difficult to indicate which of the two groups any given student was identified with. The questionnaire did not necessarily require a strong rating in one direction or the other. Therefore, the task of making the ratings was facilitated since the resident assistants were free to check intermediate positions where necessary.

All the questionnaires were distributed within the

space of three days and were returned to the investigator within one week after initial distribution. The data for each student were transcribed to the 5x8 cards and tabulation of the results begun.

In order to gather data for reliability studies of the instruments, the test-retest method was employed with a sample of the original respondents. Approximately three weeks from the time the questionnaires were originally completed, a random sample of 52 students was asked to complete the Student Questionnaire again. Also, a group of ten resident assistants was asked to respond once again to the Peer Group Questionnaire. The ten resident assistants re-rated the peer groups of 168 students. The results of these reliability studies are reported in a later section of the present chapter.

Following the close of the spring term, the grade sheets of all the students remaining in the sample were examined for the third time. The grades were entered on the 5x8 cards and the cards were sorted into the three classifications of students required for the study.

Methods of Analyzing the Data

The analysis of the data gathered for this study was accomplished by using traditional methods of statistical inference. Many of the data were of such a nature that only

the number of cases which fell in specified categories was of interest. Chi-square tests of significants were employed in such instances. In other situations, more precise distinctions were attempted and parametric statistics were employed. These included tests of the significance of the difference between two means; tests of the hypothesis that two variances were equal; and tests of the hypothesis that obtained correlations were significantly different from zero. Some of the hypotheses required one-tailed tests and others required two-tailed tests of significance.

Primary statistical references were Walker and Lev (51), Statistical Inference and Peters and VanVoorhis (37), Statistical Procedures and Their Mathematical Bases. Tables of the percentile values of the chi-square distribution, "Student's" distribution, and the F distribution were entered to determine significance levels. The tables reported in Walker and Lev (51:464-469) were used for this purpose. Flanagan's table of correlations corresponding to given proportions of successes in the 27 percent scoring highest and the 27 percent scoring lowest on a continuous variable, which is reported in Walker and Lev (51:472-475), was used in determining the contributions of the respective items on the Student Questionnaire to the total expectancy score.

Reliability of the Instruments

The Student Questionnaire. The Student Questionnaire was designed to yield a measure of a student's perception of the academic expectancies held for him by members of his home group. The reliability of this instrument was studied in two ways. First, the reliability of each of the ten items on the questionnaire was studied separately. Secondly, the reliability of the total score was determined. Data for these reliability studies were obtained by re-administering the questionnaire to 52 students randomly selected from the total population. Three weeks elapsed between the first and second administrations of the questionnaire.

Table 1 shows the distribution of the differences in responses between the first and second administrations for each of the ten items. Positive differences indicate that the respondents shifted to a lower numbered response the second time. Negative differences indicate selection of higher numbered responses the second time the questionnaire was completed. The means and standard deviations of the ten distributions of differences were computed and are also reported in Table 1.

TABLE 1. DIFFERENCES BETWEEN RESPONSES ON TWO SUCCESSIVE ADMINISTRATIONS OF THE STUDENT QUESTIONNAIRE

Item	Differences					Mean	Standard Deviation	N
	-2	-1	0	+1	+2			
1	0	4	38	10	0	+.115	.506	52
2	1	4	41	6	0	.000	.519	52
3	1	13	29	9	0	-.115	.698	52
4	0	11	33	8	0	-.058	.602	52
5	1	5	38	8	0	+.019	.572	52
6	0	5	41	5	1	+.038	.518	52
7	1	10	32	8	1	-.038	.706	52
8	0	5	40	7	0	+.038	.480	52
9	0	2	41	9	0	+.135	.439	52
10	1	3	40	8	0	+.058	.534	52

The standard deviations reported in Table 1 are measures of the variability of the responses to the questionnaire items on two successive administrations of the questionnaire. Standard deviations ranging from .439 to .706 were observed. Thus, the chances that a given student's responses did not differ by more than one standard deviation on any one item are two to one and the chances are nineteen to one that differences no larger than two standard deviations occurred. Therefore, a measure of the reliability of each item is obtained by referring to the standard deviation of the

differences for that item. In general, the standard deviations did not greatly exceed 0.50. No cases were observed where the actual differences were +3 or -3, which would be the maximum possible difference since each item contained four possible responses. Only seven of the 52 students showed differences of +2 or -2. For every item, the majority of the students showed on differences in their responses.

The interpretation of Table 1 should also take into consideration the fact that a reported standard deviation is a form of standard error of estimate and not standard error of measurement. We have evidence regarding the variability of a student's responses to an item from one administration of the questionnaire to the other, but we do not have a measure of the scatter of the individual student's responses around his hypothetical "true" response. The nature of the items makes the computation of the standard errors of measurement for each of the items inappropriate. However, in situations like this, the standard error of measurement (if it can be computed) is smaller than the standard error of estimate. Therefore, any inferences drawn from Table 1 regarding the reliability of the items, if in error, will be in the direction of under-estimating the true reliabilities. Several authors have discussed the vagaries of the standard error of estimate and the standard error of measurement as measures of instrument reliabilities and the suggestions of Cureton (11) and Peters and VanVoorhis (37) are followed in

presenting the reliability of the total expectancy score.

The total expectancy score derived from the Student Questionnaire was determined by counting the number of (1) responses. Expectancy scores ranged from zero to ten. The bivariate distribution of the total expectancy scores obtained by the 52 students on the two administrations of the questionnaire is reported in Table 2.

TABLE 2. DISTRIBUTION OF EXPECTANCY SCORES ON TWO SUCCESSIVE ADMINISTRATIONS OF THE STUDENT QUESTIONNAIRE

Second Admin. Scores	Expectancy Scores Obtained on First Administration											f_2
	0	1	2	3	4	5	6	7	8	9	10	
10								1	1		2	4
9								1	2			3
8						2		2	2			6
7					1	1		5				7
6				1		1	1	1	2			6
5				2	1	1	1					5
4		1		4	1	1						7
3		1		3	1							5
2			2	3								5
1	1	1		1								3
0		1										1
f_1	1	4	2	14	4	6	2	10	7	0	2	52

The Pearson Product-Moment correlation between the two sets of obtained scores reported in Table 2 was found to be .866. This reliability coefficient is spuriously low as a measure of the true reliability since it was based on the correlation of two sets of fallible measures. Cureton (11: 685) advocates that reliability of an instrument be reported in terms of the index of reliability. This index is the correlation between a set of fallible (obtained) measures and the hypothetical set of true scores for the individuals in the group. True scores have been defined by Peters and Van Voorhis (37:204) as "the scores yielded by an instrument applied an infinite number of times and the average taken so that the scores have been completely stabilized." This hypothetical distribution of obtained scores is impossible to secure; however, Peters and VanVoorhis (37:205) have shown that the correlation between a set of fallible scores and a set of true scores is the square root of the reliability coefficient of the instrument. Therefore, the index of reliability of the total expectancy score obtained on the Student Questionnaire was computed and found to be .931. According to Walker (50:25), an index of reliability of .931 is sufficiently high for the study of group behavior.

The standard error of measurement of the total expectancy score derived from the questionnaire was computed and found to be .94. Thus, the chances are two to one that an individual's obtained score did not differ from his true

score by more than .94 points and the chances are nineteen to one that differences no larger than 1.88 occurred. The computation of the standard error required a measure of the variance in the sample. For this purpose, the variance of the two distributions was pooled and used as the estimate of the population variance. The standard deviation derived from the pooled variances was 2.58 and the combined means was found to be 5.14.

An indication of the representativeness of the sample used for the reliability studies of the Student Questionnaire was obtained by comparing the mean and standard deviation (pooled) of the sample with the mean and standard deviation of the total population. (Treatment of the data for the total population is reported in Chapter IV.)

The means of the sample and the population were 5.14 and 5.17 respectively. The critical ratio was .083, which is well below the critical ratio of 1.96 required to reject the hypothesis that the means are different at the five percent level of confidence. It may be concluded that there was no significant difference between the two means.

The standard deviation of the sample and the population were 2.58 and 2.62 respectively. For the hypothesis that the standard deviations are different to be rejected at the five percent level of confidence, the value of the statistic, F, must equal or exceed 1.44 when there are 835 degrees of freedom in the numerator and 51 degrees of freedom in the

denominator. The obtained value of F was 1.03 which is below the value required to reject the hypothesis that the standard deviations are different at the five percent level of confidence. It may be concluded that there was no significant difference between the two standard deviations.

The Peer Group Questionnaire. The Peer Group Questionnaire was designed to assess the quality of the academic expectancies held for an individual by members of his university peer group. The reliability of this instrument was studied by having a group of ten resident assistants respond again to the questionnaire three weeks after they made their original ratings. The ten resident assistants re-rated the peer groups of 168 students. Table 3 shows the distribution of the differences between the original ratings and the re-ratings of the peer groups. For purposes of analysis, the rating "Associates mostly with Group A" was assigned position 1; "Tends to associate with Group A" was assigned position 2; "Tends to associate with Group B" was assigned position 3; and "Associates mostly with Group B" was assigned position 4. Positive differences indicate a shift in the direction from "B" towards "A", and negative differences a shift from "A" towards "B". These numbers do not represent equal-interval measurements, and, therefore, may be thought of as ordinal only.

TABLE 3. DIFFERENCES BETWEEN RATINGS ON TWO SUCCESSIVE ADMINISTRATIONS OF THE PEER GROUP QUESTIONNAIRE

Differences					Mean	Standard Deviation	N
-2	-1	0	+1	+2			
1	11	122	31	3	.14	.570	168

The standard deviation of .570 is a measure of the variability between the original ratings of the peer groups by the resident assistants and their re-ratings of the same groups three weeks later. The chances that two successive ratings did not differ by more than .570 are two to one and the chances are nineteen to one that differences no larger than 1.14 occurred. No cases were observed where the actual differences were +3 or -3, which would be the maximum possible differences since the ratings were made with respect to four classifications. Only four of the 168 pairs of ratings showed differences of +2 or -2. Seventy three percent of the ratings were exactly the same both times.

Validity of the Instruments

One of the limitations of this study was the lack of criteria for validating the instruments. If adequate criteria had been available if would not have been necessary to develop the instruments at all. Instead, the criterion measures

themselves could have been used. Therefore, the validity of the instruments, in the strict sense of the word, was uncertain. The best that could be done was to draw on the theoretical framework of the study and attempt to develop instruments in accordance with the requirements of the theoretical framework. The theoretical framework is treated in Chapter I and the rationale for the development of the instruments is included in Chapter III. While it was impossible to study systematically the validity of the instruments against true outside criteria, some supportive evidence of their validity was obtained.

A necessary (but not sufficient) condition for valid measurement is reliable measurement. On the basis of the reliability studies, it was felt that the requirements of reliability of measurement were adequately met. Data regarding reliability of the instruments are reported in Tables 1, 2, and 3.

The Student Questionnaire. Cureton (11:643-649) has discussed the problem of the validity of an instrument such as the Student Questionnaire. His approach to the problem involves establishing that the summary scores or total scores on an instrument do, in fact, represent "measurements" and not simple "appraisals". "Appraisals" are described as the aggregate value of the responses to a series of items which may or may not be positively related to one another or the summary score. On the other hand, the term "measurement" is

more restrictive. Quoting Cureton, "unless the item . . . scores are themselves related, in the sense that they vary consistently rather than independently, the summary (total) score is an appraisal but not a measurement." Measurement requires (1) an approximately linear score continuum, and (2) a set of approximately equal score units. For clarity, Cureton's remarks on these two requirements for measurement are quoted.

> The linearity of the continuum need not be perfect, and the score units need not be exactly equal. But the continuum must at least exist, and every unit (item or observation score) must have some relation to it. This means that when we score a set of . . . items or criterion observations for each of the individuals of an appropriate group, every item score must exhibit some significant positive correlation . . . with the total score.
>
> . . . . . .
>
> The particular sense in which they (item scores) must be equivalent is that each one of them must be an equivalent indicator of the total summary score. Ideally each item must have the same validity as every other, as an indicator of the summary score, and these validities must all be above zero. In practice we are likely to accept evidence that each item score possesses some significant positive validity as a working approximation to the ideal.

Not only must every item score be related to the summary score, but the correlations between the item scores and the summary scores should be approximately equal. Quoting Cureton again, "no one of the essential conditioning factors of the test (instrument) or observational situation may be of overriding importance, and neither may any one reaction of

the subject to the test (instrument) or observational conditions." If the responses to an instrument fulfill the requirements specified above, we have what may be appropriately called a quasi-measurement. According to Cureton, "quasi-measurements may for practical purposes be treated as measurements. They may be added, subtracted, averaged, correlated, etc."

Cureton suggests further that whenever the sum of the item scores on an instrument can be defended as a quasi-measurement, "it (the sum) is a quasi-measurement of 'whatever', in the reaction-systems of the individuals, is evoked in common by the . . . items as presented . . ." Referring once again to the theoretical framework of this study and the rationale for the development of the Student Questionnaire, it can be seen that each of the ten items was, in fact, designed for the express purpose of evoking a student's perception of the academic expectancies held for him by members of his home and home community. Thus, it may be presumed that " 'whatever' . . . is evoked in common by the . . . items" is quite likely to be related to the expectancies as defined. It remains to be demonstrated, however, that the scores on the ten items possess some degree of consistency and that they measure to some substantial degree the same thing. Once this has been demonstrated, it may be assumed that the expectancy data derived from the Student Questionnaire did, in fact represent "measurements" and that

confidence may be placed in the total expectancy score as an internally consistent measure of what it purports to measure.

It was reported earlier in the present chapter that the total expectancy scores derived from the Student Questionnaire distributed themselves along a continuum from zero to ten with a mean of 5.17 and a standard deviation of 2.62. In order to determine the contribution of each of the ten questionnaire items to the total expectancy score, it was necessary to obtain the correlations between the responses to the items and performance on the whole questionnaire. A method devised by Flanagan (16) was used for this purpose. The 836 total expectancy scores derived from the questionnaire were sorted into two groups comprised of the upper 27 percent of the scores and the lower 27 percent of the scores. The middle 46 percent were put aside. For each of the ten items, the proportions of (1) responses in each of the high and low 27 percent groups was obtained. Flanagan's table of product-moment correlations, which is reported by Walker and Lev (51:472-475) was entered and the required coefficients noted. The results are shown in Table 4.

TABLE 4. CORRELATIONS BETWEEN ITEM RESPONSES AND TOTAL EXPECTANCY SCORES ON THE STUDENT QUESTIONNAIRE

Item	1	2	3	4	5	6	7	8	9	10	Median
Correlation with Total Score	.67	.72	.73	.80	.67	.70	.62	.82	.61	.68	.69

The correlations reported in Table 4 are all positive and may be assumed to be statistically significant. (No method of computing the standard error of a correlation derived from Flanagan's table was known to the investigator; however, the standard error of the traditional Pearson Product-Moment correlation derived from a sample of 836 cases is .03. Since all the correlations reported in Table 4 were at least twenty times .03, the assumption of significance seemed justified.) The median correlation was found to be .69. The range was from .61 to .82. While the respective correlations differed somewhat, it was assumed that the differences were not so great that they did not represent a working approximation to the ideal which is that no differences would be observed between the correlations.

As a result of the item score-total score correlation studies, it was concluded that the Student Questionnaire was measuring something. It was postulated that it was providing a valid measurement of a student's perceptions of the academic

expectancies held for him by members of his home group.

The foregoing rather laborious treatment of the validity of the Student Questionnaire was not intended to be a substitute for a more desirable validation of the instrument against an acceptable outside criterion, but under the circumstances that was impossible. According to Cureton (12) the validity data are simply "mathematical rationalizations", and are, at best, only suggestive. But it was felt that if it were possible to demonstrate that the instrument met the criterion of internal consistency and possessed the characteristics for measurement, it should be reported as such and included in the discussion of instrument validity.

The Peer Group Questionnaire. It was possible to obtain some measure of the validity of the Peer Group Questionnaire against an outside criterion. The responses to items 11 and 12 included at the bottom of the Student Questionnaire provided a convenient source of information against which to validate the peer group rating made by the resident assistants. Item 11 dealt with the student's knowledge of the grades earned by his close friends in the precinct. Item 12 dealt with the student's perception of the grades he felt his close friends expected him to get.

A random sample was drawn from the population by pulling all the cards of students whose student numbers ended in 7 or 1. Since student numbers are assigned consecutively as students apply for admission to the university,

it was felt that this method would provide a random sample of the population. The procedure resulted in a sample of 158 cases. Three cases were unusable since the students did not respond to one or both of the items, leaving 155 cases for the validity study. Inspection of the 155 cases revealed that cases had been drawn from 58 of the 68 precincts in the eight men's residence halls. The sample was deemed adequate for purposes of the study.

The rationale for the development of the Peer Group Questionnaire assumed that there would be a correspondence between the academic performance of a student's peer group and his perception of the academic expectancies which his peers held for him. Data relevant to this assumption are presented in Table 5. The numbers, 1, 2, 3, and 4, refer to the numbered responses in items 11 and 12; and the numbers in the cells indicate the observed frequencies of the pairs of responses.

TABLE 5. RELATIONSHIP BETWEEN ACADEMIC PERFORMANCE OF PEER GROUP AND EXPECTANCIES HELD FOR GROUP MEMBER AS PERCEIVED BY MEMBER

Perceived Expectancies	Peer Group Performance				f_E
	1	2	3	4	
4	0	2	3	6	11
3	1	8	45	8	62
2	2	23	20	5	50
1	6	14	11	1	32
f_P	9	47	79	20	155

Inspection of Table 5 shows that the cases tended to accumulate in the lower-left and upper-right hand quadrants. This accumulation suggests a positive relationship between the variables. This relationship was tested for its significance by using the chi-square test of independence in contingency tables. Since the theoretical frequencies in some of the cells were found to be less than five, both variables were dichotomized between 2 and 3, and chi-square was computed for the 2x2 contingency table. The resulting value of chi-square was 26.6 (chi-square .999 = 10.8, df = 1). The hypothesis of independence was rejected beyond the .001 level; and, it was concluded that a positive relationship existed between the academic performance of a student's peer

group and his perception of the academic expectancies which his peers held for him. This conclusion is tenable so long as the responses to item 11 are assumed to be valid. Since knowledge of one's college friends' grades is quite common among undergraduates, it was assumed that the students were, in the main, able to report fairly accurately the general level of their friends' grades.

A measure of the amount of the relationship demonstrated in Table 5 was obtained by computing the tetrachoric correlation from the 2x2 contingency table resulting from dichotomizing the data. The correlation was found to be .647.

The resident assistants were instructed to rate the peer groups of the subjects in the study in terms of the academic motivations exhibited by the majority of the members of the respective groups. This involved a subjective judgment on the part of the resident assistants. It was felt by the investigator that there would probably be a relationship between the resident assistants' rating and the quality of the grades earned by the various peer groups. The responses to item 11 provided a criterion against which to test the validity of the peer group ratings made by the resident assistants. Item 11 was particularly valuable for this purpose, not only because it dealt with a given student's knowledge of the grades of his peers, but, perhaps, what is more important, it permitted the student himself to decide who his peers really were. Thus, in a way, we have a check

on the correspondence between a student's perception of who his peers were and the resident assistant's perception of who the student's peers were. Table 6 presents the data comparing peer group ratings and the students' responses to item 11. The numbers, 1, 2, 3, and 4, refer to the numbered responses in item 11 and the positions of the ratings on the Peer Group Questionnaire. The same positioning scheme for the ratings was used in the reliability study of the ratings. A rating of 1 indicates that the rater thought the student's peer group was highly motivated academically and ratings 2, 3, and 4 indicate progression toward the lower end of the continuum.

TABLE 6. RELATIONSHIP BETWEEN RATINGS OF PEER GROUP AND GRADES EARNED BY PEER GROUP AS PERCEIVED BY GROUP MEMBER

Peer Group Performance	Peer Group Ratings				f_P
	1	2	3	4	
4	3	8	3	6	20
3	15	23	19	22	79
2	14	13	14	6	47
1	6	1	2	0	9
f_R	38	45	38	34	155

Analysis of Table 6 reveals that the cases tended to accumulate in the lower-left hand quadrant and the upper-right hand quadrant over and above what might be normally expected if no relationship existed. It was noted that peer group ratings 2 and 3 contributed little to the relationship. This is in keeping with the commonly found situation where intermediate values of a variable are frequently less valid than extreme values. Due to the nature of the Peer Group Questionnaire and the complexity of the dynamics being rated it may be assumed that the ratings reported on it were particularly prone to be less valid in the intermediate range than at the extremes. Thus, it was decided to employ the method of widely spaced groups to overcome this difficulty.

The responses on item 11 were dichotomized between 2 and 3, and peer group ratings 2 and 3 were excluded. The remaining data were arranged in a 2x2 contingency table of 72 total cases. Chi-square was computed and found to be 9.58 (chi-square .995 = 7.8, df = 1). The hypothesis of independence was rejected beyond the .005 level; and, it was concluded that a positive relationship existed between the academic motivations of a student's peer group as perceived by the resident assistant and the academic performance of the student's peer group as reported by him.

A measure of the amount of the relationship demonstrated in Table 6 was obtained by computing the tetrachoric correlation from the 2x2 contingency table. The method

described by Peters and VanVoorhis (37:375-382) for determining tetrachoric correlation from widespread classes was employed. The correlation was found to be .371.

On the basis of these studies, it was concluded that the ratings reported by the resident assistants on the Peer Group Questionnaire, while inappropriate for strict individual interpretation, could be relied upon for study of group tendencies.

CHAPTER IV

ANALYSIS OF THE DATA

The data derived from the Student Questionnaire and the Peer Group Questionnaire were of such a nature that comparisons between probationers and non-probationers and comparisons between probationers and raisers could readily be made. For the most part, the data were arranged in contingency tables and appropriate statistical tests applied to determine the significance of the observed relationships. The five percent level of confidence was established as the requirement for statistical significance.

The comparisons that were made between the various groups are reported in the first sections of the chapter and supplementary analyses involving correlations with academic performance, inter-instrument correlations, and the relationship between academic performance and a combination of peer expectancies and home expectancies are presented in later sections.

Comparisons between Probationers and Non-Probationers with Respect to Their Perceptions of the Academic Expectancies Held for Them by Members of Their Home and Home Community Groups

Comparisons with Respect to Each of the Items on the Student Questionnaire. The Student Questionnaire was constructed primarily to yield a total expectancy score which

could be used in comparing the academic performance of the three groups of students identified for this study. However, it was felt that it would be of interest to analyze the students' responses to each of the ten items separately. Table 7 shows the distributions of the responses of the probationers and the non-probationers for each item. Chi-square was computed for each of the ten contingency tables to determine the significance of the relationships, if any, between the students' responses and their academic status. The numbers, 1, 2, 3, and 4, refer to the numbered responses to the questionnaire items. As they proceed from left to right, they are indicative of lowered expectancies. Some of the theoretical frequencies in the "4" cells were found to be below five. In this case the observed frequencies were added to cell "3" in order to compute chi-square. Two degrees of freedom (df) in the df column indicates this grouping. The significance level indicates the probability with which the distributions could have occurred by chance from an uncorrelated population.

TABLE 7. COMPARISONS BETWEEN PROBATIONERS AND NON-PROBATIONERS WITH RESPECT TO THEIR RESPONSES TO EACH OF THE ITEMS ON THE STUDENT QUESTIONNAIRE

Item	Groups	Responses				N	df	Chi-Square	Significance Level
		1	2	3	4				
1	Probationer	216	71	48	5	340	2	6.7	.05
	Non-Probationer	266	65	36	2	369			
2	Probationer	214	116	8	2	340	2	5.3	.10
	Non-Probationer	262	98	7	2	369	(1	5.2	.025)
3	Probationer	141	128	67	4	340	2	14.0	.001
	Non-Probationer	200	122	45	2	369			
4	Probationers	147	130	61	2	340	2	27.7	.001
	Non-Probationers	227	110	30	2	369			
5	Probationers	200	99	41	0	340	2	13.2	.005
	Non-Probationers	263	68	37	1	369			
6	Probationers	199	99	37	5	340	2	13.2	.005
	Non-Probationers	255	65	47	2	369			
7	Probationers	162	98	60	20	340	3	14.3	.005
	Non-Probationers	225	89	40	15	369	(2	14.2	.001)
8	Probationers	181	120	38	1	340	2	6.2	.05
	Non-Probationers	228	113	27	1	369			
9	Probationers	21	92	159	68	340	3	147.0	.001
	Non-Probationers	135	139	60	35	369			
10	Probationers	24	97	159	60	340	3	147.0	.001
	Non-Probationers	136	148	63	22	369			

Analysis of Table 7 shows that for every questionnaire item the cases tended to accumulate in the lower-left and upper-right hand quadrants over and above chance occurrence. This suggests that there was a positive relationship between

the students' responses and their academic status. It can be said with considerable certainty that the questionnaire items did differentiate significantly between probationers and non-probationers as a group. In all cases but one (item 2), the probability with which the observed distributions could have occurred by chance was less than .05. (The right hand tails of the distributions of responses to item 2 were erratic and the frequencies small. By lumping responses 2, 3, and 4 together and computing chi-square with one degree of freedom, significance at the .025 level was obtained. This finding is reported parenthetically in the table.)

Items 1 and 2 dealt with the student's perceptions of the attitudes and feelings of his parents regarding his going to college and his attainment of a college degree. The items are reproduced here for ease of reference.

1. My parents
   (1) have planned since I was quite young for me to go to college
   (2) have planned since I was in high school for me to go to college
   (3) have never really planned for me to go to college
   (4) would rather have me get a job or work at home than go to college

2. My parents
   (1) would be extremely disappointed if I did not get a college degree
   (2) would be mildly disappointed if I did not get a college degree
   (3) really don't care whether I get a college degree or not
   (4) would prefer that I not get a college degree

There was a tendency for the non-probationers to indicate that their parents had planned over a longer period of time for them to go to college. Similarly, the non-probationers tended to feel that their parents would exhibit greater disappointment over their failure to attain a college degree.

Items 3, 4, and 8 were worded the same, except that the stems were different. Each of the three items dealt with the student's perception of what others would think if he did not go to college. Item 3 dealt with neighbors and friends of the family; item 4 dealt with high school friends; and item 8 dealt with relatives. The items were:

3. If I did not go to college, the neighbors and friends of the family
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

4. If I did not go to college, my close friends from high school
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

8. If I did not go to college, my relatives
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

Both probationers and non-probationers tended to agree that their relatives would wonder more than their high school friends or neighbors if they did not go to college. A total of 409 students (probationers and non-probationers combined) indicated that their relatives would wonder "quite a bit" if they did not go to college, while 374 and 341 respectively indicated that their high school friends and their neighbors would wonder "quite a bit" at their not going to college.

Despite the fact that the students ranked relatives highest in their propensity to wonderment about their not going to college, it was the propensity to wonder of the students' high school friends that proved to differentiate probationers from non-probationers most significantly. Since there were two degrees of freedom in the computation of the three chi-squares, the rank order of the chi-squares provides a clue to the relative importance of the expectancies held by these three groups of "significant others". High school friends ranked first (chi-square = 27.7); neighbors and friends of the family ranked second (chi-square = 14.0); and relatives ranked third (chi-square = 6.2).

Items 5 and 6 dealt with the amount of encouragement the student felt he received from high school staff members regarding his going to college. Item 5 involved teachers and item 6 involved principals and counselors. The items were:

5. My high school teachers
   (1) strongly encouraged me to go to college
   (2) mildly encouraged me to go to college
   (3) didn't encourage me at all to go to college
   (4) discouraged me from going to college

6. My high school principal or counselor
   (1) strongly encouraged me to go to college
   (2) mildly encouraged me to go to college
   (3) didn't encourage me at all to go to college
   (4) discouraged me from going to college

The distributions of responses to items 5 and 6 were quite similar. In both instances, the non-probationers seem to have been encouraged to go to college more strongly. Of particular interest is the fact that more than half of the probationers felt they had been strongly encouraged to go to college by high school staff members.

Item 7 dealt with how many of a student's high school friends were going or contemplating going to college. Chi-square, calculated with three degrees of freedom, was significant at the .005 level. When responses 3 and 4 were lumped together, significance at the .001 level was found. The item read as follows:

7. Of my close friends from high school
   (1) most of them are now going or planning to go to college
   (2) quite a few of them are now going or planning to go to college
   (3) a few of them are now going or planning to go to college
   (4) practically none of them are now going or planning to go to college

More than half of the non-probationers reported that most of their high school friends were going to college and less than half of the probationers did so. Twenty-five more probationers than non-probationers indicated that few or none of their close high school friends were going to college.

Items 9 and 10 involved the expectancies which father and mother held for their son in terms of actual grade-point-averages. The relationship of the expected grade-point-averages to the numbered responses may be determined from the items themselves.

9. My father
   (1) expects me to get at least a 3.00 grade-point average
   (2) expects me to get at least a 2.50 grade-point-average
   (3) expects me to get at least a little better than a 2.00 grade-point-average
   (4) is satisfied as long as I make my 2.00 grade-point-average

10. My mother
   (1) expects me to get at least a 3.00 grade-point-average
   (2) expects me to get at least a 2.50 grade-point-average
   (3) expects me to get at least a little better than a 2.00 grade-point-average
   (4) is satisfied as long as I make my 2.00 grade-point-average

The non-probationers clearly indicated that their parents held higher academic expectancies for them than did the probationers. Nevertheless, 121 probationers indicated that one or both parents expected them to earn a 2.50 grade-point-average or higher.

Comparisons with Respect to the Total Expectancy Scores Derived from the Student Questionnaire. The total expectancy score derived from the questionnaire was intended to yield a composite measure of a student's perception of the academic expectancies held for him by members of his home group. Table 8 shows the distributions of the total expectancy scores for the probationers and the non-probationers. A score of 10 indicates high expectancies and a score of 0 indicates very low expectancies as perceived by the student.

TABLE 8. COMPARISONS BETWEEN PROBATIONERS AND NON-PROBATIONERS WITH RESPECT TO TOTAL EXPECTANCY SCORES ON THE STUDENT QUESTIONNAIRE

Academic Status	Total Expectancy Scores											N	Mean	C.R.	Sig. Level
	0	1	2	3	4	5	6	7	8	9	10				
Non-Prob'ners	13	14	17	20	43	50	44	45	61	26	36	369	5.69	6.81	.0005
Prob'ners	19	28	31	44	49	46	53	29	32	6	3	340	4.44		

The mean expectancy score for the non-probationers was 5.69 and the mean for the probationers was 4.44. The critical ratio test was performed to test the hypothesis that the mean of the non-probationers was higher than the mean of the probationers. The value of the critical ratio, 6.81, was found to be significant beyond the .0005 level of confidence

($t_{.9995} = 3.29$, one-tailed test). This indicates that, as a group, probationers and non-probationers were differentiated from each other with respect to their total expectancy scores derived from the Student Questionnaire.

In order to test further the relationship between academic status and total expectancy scores, it was decided to stratify the samples at three separate levels of scholastic aptitude. The students' scores on the American Council on Education Psychological Examination (ACE) were available as measures of scholastic aptitude. The scores were reported in MSU derived score units. ACE scores of 5 and 6 were labeled as "average"; those above 6 as "above average"; and those below 5 as "below average". These dividing lines are in keeping with common practice at the university counseling center in interpreting ACE scores to students. In general, 44 percent of the students would be expected to have "average scores" and 28 percent respectively would be expected to have "above average" and "below average" scores. Table 9 shows the findings that resulted from this stratification by ACE scores.

TABLE 9. COMPARISONS BETWEEN PROBATIONERS AND NON-PROBATIONERS WITH RESPECT TO TOTAL EXPECTANCY SCORES--STRATIFIED BY SCHOLASTIC APTITUDE LEVEL

Academic Status	Total Expectancy Scores 0	1	2	3	4	5	6	7	8	9	10	N	Mean	C.R.	Sig. Level
ABOVE AVERAGE SCHOLASTIC APTITUDE															
Non-Prob'ners	6	5	4	9	16	16	16	24	31	13	25	165	6.62	4.29	.0005
Prob'ners	0	4	2	5	4	3	8	6	2	1	0	35	4.83		
AVERAGE SCHOLASTIC APTITUDE															
Non-Prob'ners	2	6	12	8	23	30	22	19	24	10	8	164	5.60	3.65	.0005
Prob'ners	7	8	11	21	28	23	22	16	17	3	1	157	4.69		
BELOW AVERAGE SCHOLASTIC APTITUDE															
Non-Prob'ners	5	3	1	3	4	5	6	2	6	3	3	41	5.12	2.00	.025
Prob'ners	12	16	18	18	17	20	23	7	13	2	2	148	4.07		

Examination of Table 9 reveals that at each level of scholastic aptitude the mean for the non-probationers was higher than the mean for the probationers. In each case the critical ratio was significant beyond the .025 level of confidence ($t_{.975} = 1.96$, one-tailed test). Thus at each of the three levels of scholastic aptitude, the total expectancy score derived from the Student Questionnaire was found to differentiate between probationers and non-probationers as a group.

Comparisons Between Probationers and Non-Probationers with Respect to the Ratings of Their Peer Groups Made by the Resident Assistants

Each of the students in the study had his university peer group rated by the resident assistant in charge of his residence hall precinct. The ratings indicated the resident assistant's opinion of the academic motivations of the group of students with whom a given student most closely associated. A rating of 1 indicated that the student associated mostly with highly motivated students, and ratings of 2, 3, and 4 indicated progression downward. Data on the peer group ratings are reported in Table 10.

TABLE 10. COMPARISONS BETWEEN PROBATIONERS AND NON-PROBATIONERS WITH RESPECT TO PEER GROUP RATINGS

Academic Status	Peer Group Ratings				N
	1	2	3	4	
Probationers	26	86	97	131	340
Non-Probationers	153	119	57	40	369

The frequencies presented in Table 10 tended to accumulate in the lower left and upper-right hand quadrants. Chi-square for the table was found to be 153. This value is significant well beyond the .001 level of confidence with three degrees of freedom. Thus, as a group, the probationers

were differentiated from the non-probationers with respect to the peer group ratings.

Comparisons between Probationers and Raisers with Respect to Their Perceptions of the Academic Expectancies Held for Them by Members of Their Home and Home Community Group

Comparisons with Respect to Each of the Items on the Student Questionnaire. Data regarding the responses of the probationers and the raisers are presented in Table 11. The numbers, 1, 2, 3, and 4 refer to the numbered responses to the items on the Student Questionnaire. As they proceed from left to right, they are indicative of lowered expectancies. Some of the theoretical frequencies in the right hand tails of the distributions were quite small, therefore, adjacent cells were grouped for purposes of computing chi-square. The number in the degrees of freedom (df) column indicates the extent of this grouping. The significance level indicates the probability with which the distribution could have occurred by chance from an uncorrelated population.

TABLE 11. COMPARISONS BETWEEN PROBATIONERS AND RAISERS WITH RESPECT TO THEIR RESPONSES TO EACH OF THE ITEMS ON THE STUDENT QUESTIONNAIRE

Item	Groups	Responses				N	df	Chi-Square	Sig. Level
		1	2	3	4				
1	Probationers	216	71	48	5	340	2	2.8	.25
	Raisers	79	34	14	0	127			
2	Probationers	214	116	8	2	340	1	.57	.50
	Raisers	85	40	2	0	127			
3	Probationers	141	128	67	4	340	2	1.03	.75
	Raisers	59	45	22	1	127			
4	Probationers	147	130	61	2	340	2	3.53	.25
	Raisers	67	42	18	0	127			
5	Probationers	200	99	41	0	340	2	.72	.75
	Raisers	80	34	12	1	127			
6	Probationers	199	99	37	5	340	2	.30	.90
	Raisers	76	34	16	1	127			
7	Probationers	162	98	60	20	340	3	9.1	.05
	Raisers	79	29	12	7	127	(2	8.3	.02)
8	Probationers	181	120	38	1	340	2	-.17	.95
	Raisers	65	47	15	0	127			
9	Probationers	21	92	159	68	340	3	12.8	.005
	Raisers	19	41	43	24	127			
10	Probationers	24	97	159	60	340	3	7.8	.05
	Raisers	16	46	47	18	127			

In general, the frequencies reported in Table 11 tended to accumulate in the lower-left and upper-right hand quadrants of the various contingency tables. (Since the N's are quite different, the relationships are not readily detected by

inspection; however, all except item 8 were positive albeit low in some cases.) This finding parallels the findings obtained when probationers and non-probationers were compared with respect to their responses to each of the items on the Student Questionnaire (Table 7). However, none of the relationships demonstrated in the present table was found to be as significant statistically as those reported in Table 7.

Items 6 and 8, dealing with high school principals and relatives respectively, were clearly ineffective in differentiating between probationers and raisers. The probability that the observed distributions of responses to these two items could have occurred by chance was greater than .90, which is so near unity that the hypothesis of independence could not possibly be rejected.

The responses to items 3 and 5, dealing respectively with neighbors and high school teachers, could have been explained by the operation of chance factors or accidents of sampling with probability of .75. That is, there are three chances in four that the observed relationships could have occurred in samples from uncorrelated populations despite the fact that in the samples the variables were slightly positively correlated.

The relationship observed with respect to the responses to item 2, which dealt with parents' disappointment at the student's not getting a college degree, was significant at the .50 level. Thus, it could have been explained by chance

one time out of two.

Item 1 dealt with how long a student's parents had planned for his going to college. Item 4 involved the student's perception of how much his high school friends would wonder at his not going to college. The chi-squares for these distributions were both significant at the 25 percent level. While this level of significance is inadequate to reject the statistical hypothesis of independence with any great confidence, it may be thought of as being somewhat suggestive that a true relationship may have existed between the variables.

Of the first eight items on the questionnaire the responses to item 7 were the only ones found to differentiate between probationers and raisers with any degree of statistical significance. On item 7 the student reported how many of his high school friends were going or planning to go to college. Chi-square for this contingency table was 9.1 with three degrees of freedom and was significant beyond the .05 level.

Items 9 and 10 involved the expectancies which father and mother respectively held for their son in terms of actual grade-point-averages. Probationers and raisers were significantly differentiated as a group with respect to their responses to these items. Of note was the fact that the academic expectancies held by the fathers seemed to be more important than the expectancies held by the mothers in

differentiating between probationers and raisers. Chi-square for item 9 (fathers) was 12.8 with three degrees of freedom and chi-square for item 10 (mothers) was only 7.8 with three degrees of freedom.

Comparisons with Respect to the Total Expectancy Scores Derived from the Student Questionnaire. Table 12 shows the distributions of the total expectancy scores derived from the Student Questionnaire for the probationers and raisers. Scores of 10 indicate high expectancies and scores of 0 indicate very low expectancies.

TABLE 12. COMPARISON BETWEEN PROBATIONERS AND RAISERS WITH RESPECT TO TOTAL EXPECTANCY SCORES ON THE STUDENT QUESTIONNAIRE

Academic Status	Total Expectancy Scores											N	Mean	C.R.	Sig. Level
	0	1	2	3	4	5	6	7	8	9	10				
Raisers	3	11	11	15	17	11	22	18	9	5	5	127	4.93	1.90	.03
Prob'ners	19	28	31	44	49	46	53	29	32	6	3	340	4.44		

The mean expectancy score for the raisers was 4.93 and the mean for the probationers was 4.44. The critical ratio test was performed to test the hypothesis that the mean of the raisers was larger than the mean of the probationers. The value of the critical ratio, 1.90, was found to be significant beyond the .03 level of confidence (t .97 = 1.88,

one tailed test). It was concluded that as a group, probationers and raisers were significantly differentiated from each other with respect to their total expectancy scores.

In order to test further the relationship between total expectancy scores and academic performance, it was decided to stratify the samples by scholastic aptitude level. Scores on the American Council on Education Psychological Examination were used for the stratification of the groups into three levels. ACE scores of 5 and 6 were called "average"; above 6 was called "above average"; and below 5 was called "below average". Table 13 shows the results of this stratification.

TABLE 13. COMPARISONS BETWEEN PROBATIONERS AND RAISERS WITH RESPECT TO TOTAL EXPECTANCY SCORES--STRATIFIED BY SCHOLASTIC APTITUDE LEVEL

Academic Status	Total Expectancy Scores											N	Mean	C.R.	Sig. Level
	0	1	2	3	4	5	6	7	8	9	10				
ABOVE AVERAGE SCHOLASTIC APTITUDE															
Raisers	0	0	3	2	2	0	4	3	0	2	2	18	5.72	1.23	.20
Prob'ners	0	4	2	5	4	3	8	6	2	1	0	35	4.83		
AVERAGE SCHOLASTIC APTITUDE															
Raisers	3	8	5	8	5	8	14	12	3	2	3	71	4.82	.35	.36
Prob'ners	7	8	11	21	28	23	22	16	17	3	1	157	4.69		
BELOW AVERAGE SCHOLASTIC APTITUDE															
Raisers	0	3	3	5	10	3	4	3	6	1	0	38	4.76	1.69	.05
Prob'ners	12	16	18	18	17	20	23	7	13	2	2	148	4.08		

Examination of Table 13 reveals that at each level of scholastic aptitude the mean for the raisers was higher than the mean for the probationers. At the above average and average scholastic aptitude levels the means of the raisers were not found to be significantly higher than the means for the probationers. But, at the below average level of scholastic aptitude the difference in means was significant beyond the .05 level of confidence ($t_{.95} = 1.64$, one-tailed test).

It was concluded from the data reported in Table 13 that probationers and raisers were not significantly differentiated as a group with respect to their total expectancy scores when they were above average or average in scholastic aptitude although the differences between the means were in the predicted direction. However, those probationers and raisers who were below average in scholastic aptitude were significantly differentiated as a group with respect to their total expectancy scores.

Comparisons between Probationers and Raisers with Respect to the Ratings of Their Peer Groups Made by the Resident Assistants

Data relating the ratings of the peer groups of the probationers and raisers is presented in Table 14. A rating of 1 indicates that the resident assistant in charge of the student's precinct felt that the student associated mostly with students who were highly motivated academically.

Ratings of 2 and 3 are intermediate positions and ratings of 4 indicate association mostly with students who were poorly motivated academically.

TABLE 14. COMPARISONS BETWEEN PROBATIONERS AND RAISERS WITH RESPECT TO PEER GROUP RATINGS

Academic Status	Peer Group Ratings				N
	1	2	3	4	
Probationers	26	86	97	131	340
Raisers	21	30	34	42	127

The frequencies presented in Table 14 tended to accumulate in the lower-left and upper-right hand quadrants. Chi-square for the table was found to be 8.2. This value is significant beyond the .05 level with three degrees of freedom. Thus, as a group, the probationers and raisers were significantly differentiated with respect to the peer group ratings made by the resident assistants.

The Relationship between Total Expectancy Scores Derived from the Student Questionnaire and Grade-Point-Average for the Combined Samples

The data relating total expectancy scores derived from the Student Questionnaire to academic performance dealt

primarily with comparisons between the three groups of students identified for purposes of the study. It was felt that one more step should be taken in testing the relationship. It was decided to combine the three groups into one population of 836 cases and compute the Pearson Product-Moment correlation between the students' total expectancy scores and their cumulative grade-point-averages for their freshman year. The grade-point-averages were computed and found to range from .67 to 3.95 (D = 1.00; A = 4.00). For purposes of computation, the distribution of grades were grouped into eleven classes with a class interval of 0.3 units. Eight cases falling below 1.00 were grouped together. The bivariate distribution of the total expectancy scores and the grade-point-averages is reported in Table 15.

The correlation between total expectancy scores and grade-point-averages was found to be .284. The standard error was .03. Since the obtained correlation was more than nine times the standard error, it was concluded the obtained correlation was statistically significant. This correlation is not high by certain criteria, but it is indicative that there was a positive correlation between the total expectancy scores derived from the Student Questionnaire and actual grade-point-average.

TABLE 15. THE RELATIONSHIP BETWEEN TOTAL EXPECTANCY SCORES AND GRADE-POINT-AVERAGE

Grade-Point Average	Total Expectancy Scores											f_{GPA}
	0	1	2	3	4	5	6	7	8	9	10	
3.71 - 4.00	1	0	0	1	0	1	0	1	1	1	3	9
3.41 - 3.70	0	1	1	0	3	4	4	4	5	0	7	29
3.11 - 3.40	2	1	2	3	5	6	4	5	9	5	9	51
2.81 - 3.10	2	1	3	5	11	13	6	15	15	10	8	89
2.51 - 2.80	1	5	9	7	11	13	15	8	13	7	6	95
2.21 - 2.50	7	9	3	8	18	13	20	11	16	4	3	112
1.91 - 2.20	4	10	12	17	21	22	27	24	15	5	5	162
1.61 - 1.90	8	15	19	23	22	16	24	15	13	3	2	160
1.31 - 1.60	7	9	9	11	12	15	12	5	12	2	1	95
1.01 - 1.30	3	1	0	3	4	4	6	2	3	0	0	26
0.00 - 1.00	0	1	1	1	2	0	1	2	0	0	0	8
f_E	35	53	59	79	109	107	119	92	102	37	44	836

The correlation between total expectancy scores and grade-point-average was known to have been influenced statistically by the inter-correlation of expectancy scores with scholastic aptitude scores and scholastic aptitude scores with grade-point-average. This trend was noted throughout the study. That is, students with high expectancy scores seemed to have higher scholastic aptitude scores than students with

low expectancy scores and conversely. It is well known that there is a positive correlation between scholastic aptitude scores and grade-point-average and it is not unthinkable that there might be a relationship between the academic expectancies held for a student and his scholastic aptitude as measured by a standardized test.

In order to deal with the problem of the mutual dependence of grade-point-average upon expectancies on the one hand and scholastic aptitude scores on the other, it was decided to apply the method of partial correlation to the data. This method enabled the investigator to compute the correlation between expectancy scores and grade-point-average with the effect of their common statistical dependence upon scholastic aptitude scores "partialled out". In effect, the influence of the scholastic aptitude level of the student was held constant. Aspects of this method were employed earlier in the study when a report was made of group tendencies when the samples were stratified by scholastic aptitude level (Tables 9 and 13).

The computation of the partial correlation required knowing the correlation between scholastic aptitude scores and grade-point-average, and the correlation between scholastic aptitude scores and total expectancy scores as well as the original zero order correlation between expectancy scores and grade-point-average. The correlation between scholastic aptitude scores and grade-point-average was computed and

found to be .505 which is in keeping with the commonly found value for such correlations. The correlation between scholastic aptitude scores and total expectancy scores was computed from the data presented in Table 16. Scholastic aptitude is reported in MSU derived scores on the American Council on Educational Psychological Examination.

TABLE 16. THE RELATIONSHIP BETWEEN SCHOLASTIC APTITUDE SCORES AND TOTAL EXPECTANCY SCORES DERIVED FROM THE STUDENT QUESTIONNAIRE

Expectancy Score	Scholastic Aptitude Score										f_E
	1	2	3	4	5	6	7	8	9	10	
10	0	0	2	3	4	8	12	8	4	3	44
9	0	0	0	6	4	11	6	3	4	3	37
8	1	0	11	13	22	22	13	15	3	2	102
7	0	1	6	5	23	24	24	8	1	0	92
6	2	5	4	22	29	29	22	4	2	0	119
5	1	1	9	17	30	31	10	6	2	0	107
4	1	4	7	19	35	21	13	6	2	1	109
3	1	3	7	15	21	16	8	6	2	0	79
2	1	1	10	10	11	17	8	0	1	0	59
1	0	3	6	13	10	12	6	2	0	1	53
0	0	2	6	9	5	7	4	1	1	0	35
f_A	7	20	68	132	194	198	126	59	22	10	836

The correlation between expectancy scores and scholastic aptitude scores was found to be .258 with a standard error of .03. Since the obtained correlation was more than eight times the standard error, it was concluded the correlation was statistically significant.

The partial correlation between total expectancy scores and grade-point-average with scholastic aptitude held constant was found to be .185. The partial correlation was lower than the zero order correlation as would be expected; however, the partial correlation was still six times the standard error of .03 which indicates significance well beyond the .0005 level. That is, the observed partial correlation could not have occurred by chance from an uncorrelated population more than 5 in 10,000 times. Thus it was concluded that the correlation between total expectancy scores derived from the Student Questionnaire and grade-point-average--with scholastic aptitude held constant--was significantly different from zero.

The Relationship between Academic Performance and a Combination of Peer Group Rating and Total Expectancy Score Derived from the Student Questionnaire

A systematic analysis of the peer group ratings and their relation to actual grade-point-average was not felt to be appropriate since it would require treating the peer group data as if they were cardinal data. Also, there seemed to be little to be gained by stratifying the samples by

scholastic aptitude level and making additional comparisons between the groups with respect to the peer group ratings on that basis. The result of it all was that the data from the Student Questionnaire were studied fairly extensively and the peer group ratings not so extensively. Of course, the nature of the questionnaires partly determined this difference. However, it was felt some further consideration should be given the peer group data. With this in mind, it was decided to compare selected students' academic performance when their peer group ratings and their total expectancy scores were both taken into consideration.

In order to minimize any effect that scholastic aptitude might play and, at the same time, maintain a sizeable sample, it was decided to restrict the study to comparisons between probationers and non-probationers all of whom had "average" scholastic aptitude scores. This resulted in samples of 157 probationers and 164 non-probationers for a total of 321. Thus, the samples were nearly equal and of sufficient size to assure comfortable statistical treatment.

Of particular interest at this point was the question of whether or not there was any relationship between the peer group ratings and the total expectancy score derived from the Student Questionnaire. The bivariate frequency distribution presented in Table 17 shows this relationship for the combined probationers and non-probationers all of whom had scholastic aptitude scores of five and six on the American

Council on Education Psychological Examination. Peer group ratings of (1) indicate that a student associated mostly with a highly academically motivated university peer group and ratings of (4) indicate association with a poorly motivated group. Total expectancy scores range from zero to ten with high scores indicating that high academic expectancies were perceived by the student as being held for him by members of his home and home community group.

TABLE 17. THE RELATIONSHIP BETWEEN PEER GROUP RATINGS AND TOTAL EXPECTANCY SCORES ON THE STUDENT QUESTIONNAIRE

Peer Group Ratings	Total Expectancy Scores											f_{PG}
	0	1	2	3	4	5	6	7	8	9	10	
1	3	2	5	5	14	10	6	15	4	1	5	70
2	2	6	6	7	15	17	15	5	13	5	0	91
3	3	1	6	7	9	12	11	6	8	2	3	68
4	1	5	6	10	13	14	12	9	16	5	1	92
f_E	9	14	23	29	51	53	44	35	41	13	9	321

Inspection of Table 17 reveals that there is very little relationship between the variables. The tetrachoric correlation when the data were dichotomized at the medians was computed and found to be -.03. The standard error or r(tet) in an uncorrelated population is .09 for sample size 321; thus,

it was concluded that the observed correlation was not significantly different from zero. Furthermore, for this sample the peer group ratings and the total expectancy scores may be thought of as "uni-dimensional traits". That is, since they are uncorrelated, they must be tapping different factors if they are tapping anything at all. It was shown in previous sections of this chapter that both variables were positively related to academic performance.

The combined effect of peer group ratings and total expectancy scores in differentiating probationers and non-probationers (at the "average" scholastic aptitude level) was determined thusly: First, the combined distribution of peer group ratings was dichotomized at the combined median and cases falling above and below the median were labeled "high" and "low". The median peer group rating was 2.5. Second, the combined distribution of total expectancy scores was dichotomized at their combined median and cases above and below labeled "high" and "low" The median total expectancy score was found to be 5.15. And thirdly, from the groups thus dichotomized, it was possible to identify 16 non-probationers who were "low" on both variables and 62 non-probationers who were "high" on both variables. Similarly, there were 62 probationers who were "low" on both variables and 16 probationers who were "high" on both variables. Table 18 shows the relationship. For ease of interpretation, the column headings are in terms of the expectancies inferred

from the peer group ratings and the Student Questionnaire scores.

TABLE 18. COMPARISONS BETWEEN PROBATIONERS AND NON-PROBATIONERS OF "AVERAGE" SCHOLASTIC APTITUDE WITH RESPECT TO A COMBINATION OF PEER GROUP AND HOME GROUP EXPECTANCIES

Academic Status	Expectancies		f
	Low Home Group Low Peer Group	High Home Group High Peer Group	
Non-Probationers	16	62	78
Probationers	62	16	78
f_E	78	78	156

Direct computation of the tetrachoric correlation for Table 18 resulted in a correlation of .80. Thus, a high degree of relationship was shown when perceived "high" home expectancies were accompanied by association with a university peer group whose academic expectancies for a given student may be inferred to be "high", and obversely.

Since the direct computation of the tetrachoric correlation from Table 18 denies the existence of intermediate positions between "high-high" and "low-low" namely "high-low" and "low-high", computation by the principle of widely-spaced groups provides a more appropriate estimate of the true population correlation. The tetrachoric correlation thus

computed was found to be .574.

Incidental to this finding, the tetrachoric correlation between peer group ratings alone and academic performance for the sample was found to be .644. Also, the tetrachoric correlation between total expectancy score alone and academic performance for this sample was found to be .223. These data suggest that at the "average" level of scholastic aptitude the academic motivations of a student's peer group as rated by a resident assistant are more significantly related to his academic performance than his perception of the academic expectancies held for him by members of his home group.

This section concludes the analysis of the data. A summary and interpretation of the findings are presented in Chapter V.

CHAPTER V

SUMMARY AND CONCLUSIONS

Two questionnaires were developed by the investigator for the purpose of assessing the academic expectancies held for selected freshman, male college students by certain individuals and groups of individuals assumed to be significant others for the students. A ten item, multiple-choice Student Questionnaire was designed to determine a student's perception of the academic expectancies held for him by members of his home and home community group; and, a Peer Group Questionnaire was designed as a rating form upon which a rating of the academic motivations of a student's university peer group could be made.

Complete questionnaire data were available for 836 freshman residents of men's residence halls at Michigan State University during the 1957-1958 school year. The total sample was composed of 369 non-probationary students whose grade-point-averages during their freshman year were consistently 2.00 or higher, 340 probationary students whose grade-point-averages were consistently below 2.00, and 127 raisers whose grade-point-averages for the fall term were below 2.00 but whose cumulative grade-point-averages for the full year were 2.00 or higher.

The Student Questionnaires were distributed by residence hall assistants during the spring term and each student

completed the questionnaire privately. The resident assistants completed the Peer Group Questionnaire by rating a given student's university peer group as either highly academically motivated or poorly academically motivated.

Normative comparisons were made between the three groups of students with respect to their responses to each item on the Student Questionnaire as well as the total expectancy score derived from the questionnaire. The separate items on the questionnaire dealt with the student's perception of the attitudes and feelings of his parents, high school friends, high school staff members, relatives, and neighbors regarding his going to college and success at college. Responses to the items were numbered 1, 2, 3, and 4. Responses numbered (1) were indicative of high expectancies, (2) and (3) were intermediate responses, and responses numbered (4) indicated very low expectancies. The total expectancy score derived from the Student Questionnaire was determined by counting the number of (1) responses a student made while responding to the ten items.

Comparisons were also made between the three groups of students with respect to the ratings of their peer groups made by the resident assistants. Ratings of (1) indicated that the resident assistant thought a given student associated mostly with students who were highly motivated academically, ratings of (2) and (3) were intermediate positions, and ratings of (4) indicated association with a peer group

judged to be poorly motivated academically.

Additional analyses of the data involved the correlation between the total expectancy score derived from the Student Questionnaire and actual grade-point-average for the combined samples; and, a comparison between probationers and non-probationers of "average" scholastic aptitude with respect to a combination of peer group expectancies and home group expectancies.

A summary and interpretation of the findings and implications for further research are included in the following sections.

Summary and Interpretation of the Findings

Stated in positive hypothesis form, the four basic hypotheses tested in this study were:

(1) There is a positive relationship between a student's academic performance and his perception of the academic expectancies held for him by significant others in his home and home community group;

(2) There is a positive relationship between a student's academic performance and the academic expectancies held for him by the significant others in his peer group at the university;

(3) There is a positive relationship between a student's potential for being removed from academic

probation and his perception of the academic expectancies held for him by the significant others in his home and home community group; and

(4) There is a positive relationship between a student's potential for being removed from academic probation and the academic expectancies held for him by the significant others in his peer group at the university.

Translated into the operational language of the study, testing the first two hypotheses involved comparisons between probationers and non-probationers with respect to their responses to the Student Questionnaire and comparisons between the ratings of their peer groups made by the resident assistants. Hypotheses (3) and (4), which are really corallaries of the first two, were tested by making comparisons between probationers and raisers with respect to the two variables.

Comparisons between probationers and non-probationers with respect to their responses to each of the items on the Student Questionnaire yielded the following major findings:

(1) Each of the ten questionnaire items was found to differentiate significantly between probationers and non-probationers beyond the five percent level of confidence (chi-square tests).

(2) Items with the greatest differentiating power were items dealing with the attitudes of neighbors and friends of the family, the attitudes of high

school friends, the expectancies of mothers and fathers in terms of actual grade-point-average, and the number of a student's high school friends who were going or planning to go to college. Each of these items differentiated the groups at the .001 level of confidence.

(3) Items with intermediate differentiating power were items dealing with the encouragement to go to college the student felt he had received from high school staff members and the student's estimate of his parents' disappointment at his not getting a college degree.

(4) Items differentiating at the .05 level of confidence were those dealing with the length of time a student's parents had planned for him to go to college and the attitudes of his relatives if he did not go to college.

The total expectancy score on the Student Questionnaire was found to differentiate probationers and non-probationers at the .0005 level of confidence (one-tailed, critical ratio test). When the groups were stratified by scholastic aptitude scores into "above average", "average", and "below average" levels, the total expectancy score was still found to differentiate beyond the .025 level of confidence for each level of scholastic aptitude.

The data summarized above support the hypothesis that

there is a positive relationship between a student's academic performance and his perception of the academic expectancies held for him by the significant others in his home and home community group.

The data also suggest that the attitudes, feelings and expectancies of certain individuals in the home community may be more important than others. For example, questionnaire items dealing with the attitudes of parents, neighbors and friends of the family, high school friends, and the college plans of high school friends tended to differentiate probationers from non-probationers more significantly than items dealing with high school principals, teachers, and counselors or family relatives.

For most of the questionnaire items there was a tendency for probationers and non-probationers alike to choose the response numbered (1)--which was the response indicating the highest expectancy represented by the item. This finding suggests that the very fact that a student has been enrolled in the university for almost a year when he completed the questionnaire was indicative that academic expectancies of some magnitude were probably held for him. In every case, however, a greater percentage of non-probationers than probationers chose item responses numbered (1). Similarly, the students seemed to avoid the response numbered (4)--which was the response indicating the lowest expectancy represented by the item. Typically however, the probationers exceeded

the non-probationers in their choice of responses numbered (4).

In every statistical test employed, the differences between probationers and non-probationers with respect to the academic expectancies inferred from their responses to the Student Questionnaire were in the predicted direction and statistically significant. Thus, support of the first major hypothesis seems warranted.

The ratings made by the resident assistants of the academic motivation of the students' university peer groups were found to differentiate probationers from non-probationers at the .001 level of confidence (chi-square test). That is, students who seemed to associate most closely with a peer group which was rated as highly academically motivated were more likely to be non-probationers and students who were identified with peer groups which were rated as poorly academically motivated were more likely to be probationers.

Interpretation of this finding requires the assumption that the academic expectancies which peer group members hold for each other are reflected in the apparent academic motivation of the group as rated by the resident assistants in this case. Data presented in Chapter III which dealt with the validity of the Peer Group Questionnaire would seem to support this assumption. It was demonstrated that a student's perception of the academic expectancies held for him by his close friends were positively correlated (.647) with the general level of grades he thought his friends were receiving. It was

also demonstrated that the peer group ratings made by the resident assistants were positively correlated (.371) with the student's perception of the grades his friends were receiving. Therefore, it was concluded that the correspondence between the resident assistants' ratings and the students' own reports of the academic performance of their peers was sufficiently high to warrant fairly valid group comparisons.

On this basis, then, the data suggest that there is a positive relationship between a student's academic performance and the academic expectancies held for him by the significant others in his peer group at the university. Thus, support of the second major hypothesis tested in the study was obtained.

Comparisons between probationers and raisers were employed to test the hypotheses relating a student's potential for being removed from academic probation to the academic expectancies held for him. The same basic procedures were employed as were employed when probationers and non-probationers were compared.

Unlike the findings when probationers and non-probationers were compared, the differences between probationers and raisers with respect to the various variables were not so great. The relative smallness of the sample of raisers (127) compared to the sample of probationers (340) was partly responsible for this since even small differences between large samples are oftentimes more significant statistically than larger differences between smaller samples. Another interpretation of

this finding, however, is that true differences between probationers and raisers may not actually be as great as differences between probationers and non-probationers. The non-probationers had never been on academic probation while all the raisers had been on probation for at least one term. One might assume that since all raisers had experienced academic probation, the expectancies held for them were logically not as high as for students who had never experienced academic probation. This assumption is supported by the findings when probationers and non-probationers were compared.

While the differences between probationers and raisers were not as great as the differences between probationers and non-probationers, the observed differences were typically in the predicted direction. The single exception was the distribution of responses to item 8 on the Student Questionnaire. The responses to this item were negatively related to academic performance but statistically insignificantly.

Student Questionnaire items found to differentiate most significantly between probationers and raisers were items dealing with the number of a student's high school friends who were going or planning to go to college and the expectancies of mothers and fathers in terms of actual grade-point-average. Each of these items differentiated the groups beyond the .05 level of confidence. A clue as to the relative importance of

the expectancies inferred from these items is obtained by comparing the values of chi-square for each item. (Since each chi-square was computed with three degrees of freedom, direct comparisons are justified.) The expectancies of fathers ranked highest (chi-square = 12.8). The propensity to college going of high school friends ranked second (chi-square = 9.1). And the expectancies of mothers ranked lowest (chi-square = 7.8). This difference between the students' perceptions of the expectancies held for him by his two parents was not observed when probationers and non-probationers were compared. If any confidence can be placed in the students' responses at all, one might conclude that the probability of a student's being removed from academic probation is more closely related to the expectancies held by fathers than those held by mothers.

Two questionnaire items were found to differentiate probationers and raisers at the .25 level of confidence. That is, the observed differences could have occurred by chance only once in four times. These items dealt with the length of time a student's parents had planned for him to go to college and the attitudes of his high school friends if he did not go to college. Of note is the fact that the attitudes of a student's high school friends as he perceived them were not as highly related to academic performance as his report of how many of them were planning to go or going to college. Chi-square computed for the item dealing with attitudes of high school friends was significant at the .05 level and the

significance level of chi-square for the item dealing with the number of friends going to college was only .25 as just noted. It might be supposed that a student was more able to report objectively how many of his friends were going to college than what their feelings would be if he did not go. In which case, his report of how many friends were going to college would logically be more valid than his perception of his friends' attitudes towards his not going. In any event, for this sample, the students' reports of how many of their high school friends were going to college were found to differentiate probationers from raisers more significantly than their perceptions of the attitudes of their high school friends regarding their not going to college.

In contrast, the comparisons between probationers and non-probationers revealed that it was the attitudes of high school friends which differentiated those groups more significantly. Chi-square computed for the item dealing with attitudes was 27.7 (df = 2) and chi-square for the item dealing with the propensity to college going of high school friends was only 14.2 (df = 2). Both chi-squares were significant beyond the .001 level, but the former was nearly twice the latter. It may be presumed that a student's perception of his high school friends' attitudes towards his going to college had more affective overtones than his more or less objective or cognitive report of how many of his friends were going to college. In which case, one might

assume that a student's perception of his friends' attitudes would quite logically differentiate probationers from non-probationers more significantly. The data support this assumption. However, why doesn't the same assumption obtain with respect to comparisons between probationers and raisers? Perhaps it does and the data do not reveal it. Accidents of sampling, lack of objective reporting, or factors completely undetected may all have contributed to the apparent inconsistency in the data.

The distributions of the responses to questionnaire items dealing with the encouragement to go to college the student felt he had received from high school staff members, the attitudes of neighbors and relatives towards his not going to college, and his estimate of his parents' disappointment at his not getting a college degree, while typically in the predicted direction, were not significantly so.

The total expectancy score on the Student Questionnaire was found to differentiate probationers from raisers at the three percent level of confidence (one-tailed, critical ratio test). This finding parallels the finding when probationers and non-probationers were compared and lends further support for acceptance of the first major hypothesis of the study.

When the samples were stratified by scholastic aptitude scores, only those students who were at the "below average" level were significantly differentiated. The mean expectancy scores of the raisers were higher than the mean scores of the

probationers at all three levels, however, at the "average" and "above average" levels not significantly so. These findings suggest that students on academic probation who are among the lower echelons in scholastic aptitude as measured by a standardized test are more likely to be removed from probation when their studying is accompanied by a perception that relatively high academic expectancies are held for them by members of their home group. Thus they exceed other probationers in the attention they give their course work and succeed in raising their grades to an acceptable level. Despite the smallness of the samples involved in the present study, the data support this conclusion.

In general, probationers and raisers taken as a group were significantly differentiated with respect to their total expectancy scores derived from the Student Questionnaire. Using this general finding as a criterion, the hypothesis that there is a positive relationship between a student's potential for being removed from academic probation and his perception of the academic expectancies held for him by the significant others in his home and home community group is supported by the present study.

The ratings made of the academic motivations of the students' university peer group were found to differentiate probationers from raisers at the five percent level of confidence. Once again the results were not as significant as when probationers and non-probationers were compared, but the

findings are consistent with each other and lend mutual support for the second major hypothesis of the study. Furthermore, the data suggest that the fourth major hypothesis of the study is also tenable. That is, it would seem that there is a positive relationship between a student's potential for being removed from academic probation and the academic expectancies held for him by the significant others in his peer group.

The overall predictive efficiency of the Student Questionnaire was determined by computing the correlation between total expectancy scores and actual freshman grade-point-average for the combined sample of 836 cases. The Pearson Product-Moment Correlation was found to be .284. The correlation between scholastic aptitude scores and grade-point-average was found to be .505, and the inter-correlation of scholastic aptitude scores with total expectancy scores was found to be .258. Computation of the partial correlation between total expectancy scores and grade-point-average--with scholastic aptitude held constant--resulted in a correlation of .185. A partial correlation of .185 in a sample of 836 cases is significantly different from zero beyond the .0005 level of confidence. And, of course, the zero order correlation of .284 between total expectancy scores and grade-point-average is also statistically significant. These findings are consistent with the findings previously reported regarding the relationship between academic performance and

total expectancy scores. However, it must be conceded that the total score on the Student Questionnaire did not match the predictive efficiency of the American Council on Education Psychological Examination as a predictor of freshman grade-point-average.

The most significant relationships between academic performance and academic expectancies were found when a combination of peer group ratings and total expectancy scores were used to compare probationers and non-probationers all of whom had "average" scholastic aptitude scores. A total sample of 156 probationers and non-probationers was identified whose peer group ratings and total expectancy scores were both "high" or both "low". All the students had scores of five or six on the American Council on Education Psychological Examination. Sixty-two probationers and 16 non-probationers were identified who fell below the combined sample medians with respect to peer group ratings and total expectancy scores. Similarly, 16 probationers and 62 non-probationers who had peer group ratings and total expectancy scores above the combined sample medians were identified. The tetrachoric correlation computed by the principle of widely-spaced groups was used to determine the extent of the relationship between academic performance and the combination of expectancy factors as defined. The tetrachoric correlation was found to be .574. This observed correlation was influenced largely by the correlation between academic performance and peer group

ratings which was found to be .644 for the selected sample. The correlation between academic performance and total expectancy scores derived from the Student Questionnaire for the selected sample was found to be .223. This value approximates the previously obtained correlation between actual grade-point-average and total expectancy score.

These data would seem to indicate that the academic motivations of a student's university peer group as rated by a resident assistant are more closely related to his academic performance than his perception of the academic expectancies held for him by members of his home group. At least, this would seem to be the case among students of "average" scholastic aptitude as measured by a standardized test. This conclusion is also supported by theoretical considerations. The conformance of group members to group norms with respect to many forms of social behavior has been widely observed--even when conformance to group norms was in conflict with previously established norms and values. From this, it could be assumed that college students would be particularly prone to yield to new found group pressures when entering college and adjust their academic performance accordingly--the expectations of parents and others at home notwithstanding. In any event, the evidence from the present study would seem to support this assumption.

In review, it may be concluded that the four major hypotheses defined for this study were supported by the evidence.

No evidence was found which would seriously discredit either the major hypotheses or any of the required assumptions. The study has raised many questions and implications for further research. Some implications for further research are reported in the final section of this thesis.

Implications for Further Research

Probably the most important single implication for further research is cross-validation of the Student Questionnaire. On the basis of the present study, it would seem the Student Questionnaire is a potentially useful device for the study of students' academic performance. The study revealed a correlation of .284 between the total expectancy score derived from the questionnaire and cumulative freshman grade-point-average in a sample of 836 resident, male, Michigan State University freshmen. Cross-validation with other populations, women included, is needed to test the presently reported correlation.

The questionnaire should be administered to samples of entering freshmen. In the present study the students had been enrolled for nearly a year when they completed the questionnaire. There may be differences in the manner in which students respond depending upon the length of time they have been enrolled. Improvement in the items themselves could probably be achieved and the questionnaire might be lengthened

to include items regarding how the student himself feels about the expectancies held for him. It is possible that the effectiveness of the present questionnaire was limited since it did not take into account the student's own definition of the situation but considered only his perception of the expectancies held for him.

A study should be undertaken to test the predictive efficiency of the Student Questionnaire over time. That is, correlations between expectancy scores of entering freshmen and their sophomore, junior, and senior grades might reveal clues as to the continuing influence of the expectancies held by the home group in determining a student's academic performance. It might be hypothesized that the longer a student is in college the less would be the influence of his home group on his academic performance. This hypothesis needs to be tested.

More research is needed regarding the dynamics of the interactions within undergraduate peer groups. Residence hall personnel workers might profitably undertake systematically to study the peer group structure of their halls and develop action research projects designed to define maximum academic performance as the norm for all students. This would require including in the residence hall personnel program activities for individuals and groups of individuals which would clearly legitimize high academic achievement as a major value and observing the educational outcomes obtained.

Another implication for further research would be in the area of counseling tools and techniques. An instrument similar to the Student Questionnaire could be devised and experimented with by college counselors working with students who experience academic difficulty. The instrument could include items regarding the expectancies held for the student by parents and other persons at home, the student's own interpretation of these perceived expectancies, and some information regarding the academic motivation and achievements of the student's close college friends.

In conclusion, it should be stated that the findings of the present study should not be interpreted as evidence that a causal relationship between academic performance and academic expectancies was clearly demonstrated. The observed differences in questionnaire responses might have been influenced by the fact that the questionnaires were administered after the students had been in school for some time and had already achieved certain grade-point-averages. In which case, the achievement of the students might have been causing certain expectancies to be held for them as opposed to the interpretation that it was the expectancies of others which were causing the students to achieve. A definitive analysis of the relationship between college academic performance and academic expectancies would require gathering expectancy data before students had earned any college grades and would probably require student interviews of some depth as well as data from questionnaires and other psychometric devices.

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APPENDIX

APPENDIX

The Instruments

STUDENT QUESTIONNAIRE

Instructions to Resident Assistants

This questionnaire is to be administered to the same men whose names appear on the Peer Group Questionnaire. Note that you have a questionnaire for each man. The instructions to the student are simple and precise, and it should take him just a few minutes to respond to the twelve items.

(1) Approach each man individually when he is alone. (2) Enlist his cooperation and wait for him to complete the questionnaire. (3) Make sure he has completed all the items. (4) Return the completed questionnaire along with the PEER GROUP QUESTIONNAIRE to your Head Resident Advisor.

If necessary, assure the student that his responses will be treated in strictest confidence and will in no way affect him as a resident of the hall or as a student of the university.

STUDENT QUESTIONNAIRE

Instructions: Please respond as quickly as possible to the following twelve items. Your first reaction is all that is required. Circle the number of the response that indicates your first reaction. Please answer all the items.

1. My parents
   (1) have planned since I was quite young for me to go to college
   (2) have planned since I was in high school for me to go to college
   (3) have never really planned for me to go to college
   (4) would rather have me get a job or work at home than go to college

2. My parents
   (1) would be extremely disappointed if I did not get a college degree
   (2) would be mildly disappointed if I did not get a college degree
   (3) really don't care whether I get a college degree or not
   (4) would prefer that I not get a college degree

3. If I did not go to college, the neighbors and friends of the family
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

4. If I did not go to college, my close friends from high school
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

5. My high school teachers
   (1) strongly encouraged me to go to college
   (2) mildly encouraged me to go to college
   (3) didn't encourage me at all to go to college
   (4) discouraged me from going to college

6. My high school principal or counselor
   (1) strongly encouraged me to go to college
   (2) mildly encouraged me to go to college
   (3) didn't encourage me at all to go to college
   (4) discouraged me from going to college

7. Of my close friends from high school
   (1) most of them are now going or planning to go to college
   (2) quite a few of them are now going or planning to go to college
   (3) a few of them are now going or planning to go to college
   (4) practically none of them are now going or planning to go to college

8. If I did not go to college, my relatives
   (1) would wonder quite a bit why I did not go
   (2) would wonder a little why I did not go
   (3) really wouldn't wonder at all why I did not go
   (4) would probably take the attitude that I was better off if I didn't go

9. My father
   (1) expects me to get at least a 3.00 grade-point-average
   (2) expects me to get at least a 2.50 grade-point-average
   (3) expects me to get at least a little better than a 2.00 grade-point-average
   (4) is satisfied as long as I make my 2.00 grade-point average

10. My mother
   (1) expects me to get at least a 3.00 grade-point-average
   (2) expects me to get at least a 2.50 grade-point-average
   (3) expects me to get at least a little better than a 2.00 grade-point-average
   (4) is satisfied as long as I make my 2.00 grade-point-average

(Note: Items 11 and 12 were included with the STUDENT QUESTIONNAIRE to gather data for validity studies of the PEER GROUP QUESTIONNAIRE.)

11. Most of my close friends in the precinct
   (1) usually get at least a 3.00 grade-point-average
   (2) usually get at least a 2.50 grade-point-average
   (3) usually get at least a little better than a 2.00 grade-point-average
   (4) usually get a 2.00 grade-point-average or below

12. Most of my close friends in the precinct
    (1) expect me to get at least a 3.00 grade-point-average
    (2) expect me to get at least a 2.50 grade-point-average
    (3) expect me to get at least a little better than a 2.00 grade-point-average
    (4) expect me to get a 2.00 grade-point-average or below

The Instruments

PEER GROUP QUESTIONNAIRE

Introduction and Instructions

This questionnaire is being used to gather some confidential information about some of the men in your precinct. The information will be used in a research study that is currently being conducted and will in no way affect a resident's standing in school or his official university record.

When you think of the men of your precinct, you oftentimes think of them as members of a group or clique. Most precincts have several fairly well defined groups that operate in the precinct. These groups are usually made up of men who have something in common. Sometimes the only thing they seem to have in common is the desire to make noise or complain. Other groups are bound together by common academic interests. Still others just seem to hang around together, play cards together, eat together, or go out together.

The research that you are participating in has to do with the various groups you have in your precinct and the way in which some of your men are identified with these groups. We are concerned with two basic kinds of groups:

Group A includes

> groups made up of men who seem to be pretty highly motivated academically; most of the men in the group seem to really understand what they are here for; they take their studies rather seriously; they know what it means to put their studies first; it could be said that they expect each other to measure up pretty well academically.

Group B includes

> groups made up of men who seem to be rather poorly motivated academically; most of the men just seem to be putting in their time here; they don't take their studies very seriously; they tend to put their studies second and other things first; it could be said that they expect each other to be good guys rather than scholars

The information requested is easily indicated. The men you are to consider are listed for your convenience. (1) Think about the man: (2) Think about the group of men with whom he most closely associates: (3) Decide whether this group is most like Group A or Group B: (4) Check your decision in the appropriate column: (5) Check one column only for each man.

PEER GROUP QUESTIONNAIRE

_____Hall
Precinct_____

_____
Resident Assistant

RESIDENTS	Group A		Group B	
	Associates mostly with Group A	Tends to associate with Group A	Associates mostly with Group B	Tends to Associate with Group B
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.