A College Characteristics Instrument Measure of Absolute Change Between Freshman Expectations and Perceptions of a College Environment as Related to Grade Point Average and Sex of the Student

Zdzislaw Piotrowski

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BETWEEN FRESHMAN EXPECTATIONS AND PERCEPTIONS OF
A COLLEGE ENVIRONMENT AS RELATED
TO GRADE POINT AVERAGE
AND SEX OF THE
STUDENT

BY
ZDZISLAW PIOTROWSKI

A thesis submitted
in partial fulfillment of the requirements for the
degree Master of Science, Major in
Guidance and Counseling
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1972
A COLLEGE CHARACTERISTICS INSTRUMENT MEASURE OF ABSOLUTE CHANGE BETWEEN FRESHMAN EXPECTATIONS AND PERCEPTIONS OF A COLLEGE ENVIRONMENT AS RELATED TO GRADE POINT AVERAGE AND SEX OF THE STUDENT

This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions are necessarily the conclusions of the major department.

Thesis-Advisor

Date

Head, Guidance and Counseling

/Date
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Chapter 1

BACKGROUND OF PROBLEM

College... even the word itself conjures up visions... To some, this means the party life, the popularity contests, the gate to success, careers, jobs, prestige, marriage, sports and the happy-ever-after land beckoning them to come. The dreams for others are as varied and prosaic as the dreamers themselves. And for some, college represents the time for scholarship. The expectations are many, some real while others mythical, some fulfilled and others incomplete, sometimes disappointing if not tragic for the individual. Hawks (1964) pointedly considers student perceptions of the college experience:

He enrolls, probably, with one of two images of the academic institution... that gathered from the stereotype presented in the movies and on T.V. of a "party school" attended by "Betty Co-ed and Joe College," or that of a place which is going to be an intellectual heaven where he can learn for the pure sake of learning, where he will be able to discuss for discussion's sake and so on. He may well have enrolled for many different reasons, because he feels college is a means to an end of a job and security; because he feels that it is a good time and way to delay adult responsibility for four years; because his parents and or his high school (sic) expect him to go; because he is looking for a mate; or because everyone else in his group or crowd is going. If these are his impressions and reasons, he will be greatly disconcerted and must be helped to acquire a realistic viewpoint. The stereotypes will crumble quickly. It will not take long for "Joe College" to find that the institution no longer allows its student population to party all the time. Likewise, due to the pressure of time, the "intellectual heaven" will not be immediately visible. Both groups will find that they may well feel haunted by exams, paper deadlines, reading lists, course syllabus and the like. The well stocked library may never be investigated or pursued except for a specific assignment. Grades will continue to remain high on the list of "objectives" and the "push" for them is not lessened, as many had hoped, as the student begins to think of graduate school or obtaining a position in his chosen profession. It comes as a rude shock to many that the academic faculty and staff of the institution must promote themselves not only in the classroom, but also,
through their own publications, research, and the like, which may well mean less discussion and contact outside the academic classroom. Too often these necessary items within our academic structure seem too powerful to the student, who may well be overcome by them with the result being a withdrawal from his expectancy and little desire to pursue thought and commitment. (Hawks, 1964, pp. 7-8)

Berdie and Hood (1965), in summarizing the impact of the college experience on the student showed that many, if not most, students attend college, not because they have any marked intellectual drive or specific economic or vocational goal but because few suitable alternatives are available to them. Keats (1965), in a provocative book, The Sheepskin Psychosis, expressed the view that many young people have little need or desire for higher education, but nevertheless have been sold, or perhaps oversold, on the idea of college attendance. Lewis (1967) warns students and their parents against the proliferation of college placement bureaus which offer "difficult" students college counseling through the aid of sophisticated computer-selection paraphernalia which "guarantee" results for a fee. College acceptance is seen as the only goal.

Often college selection is not viewed by the prospective student as a totally rational and informed consideration of all formulated alternatives. Underlining this, Holland (1959b) concluded from a large scale study of finalists from the 1957 National Merit Scholarship program, that even high ability students select college with only limited information. "Students appear to make choices in the same way that consumers often, if not usually, buy household goods; they select colleges by means of vague notions which they seldom can document meaningfully." (Holland, 1959, p. 319) Even when students stated that they knew something about a university, their answers demonstrated they
actually had little accurate information about the university.

Reviewing approximately 1,000 studies concerning the impact of college on the students, Feldman and Newcomb (1970) state that the selection of a particular undergraduate institution is the outcome of a complex interaction of factors which include: the aspirations, abilities and personality of the student; the values, goals, and socio-economic status of his parents; the direction and influence of his friends, teachers and other reference persons; the size, location, tuition costs, curricular offerings and other institutional characteristics of various colleges; and the image of the college held by students and by those whose advice the aspiring student seeks.

Whatever the actual college selection process entails, it is quite evident that the young person is led by his entire social environment to believe that his future fulfillment (success, happiness, usefulness to society, etc.) will depend to a large extent on the number of college years completed. If the student is unable to meet this objective, the result is often an unpleasant, if not a shattering, experience with life.

The reality of our technological society and the predominant value structures of the middle class are such that college has become largely a mandatory goal. Thus, college administrations and overworked admissions officials, using a variety of admissions techniques and criteria, attempt to select students who will be "successful". Success often means that the student's grade point average (GPA) will be "adequate" and that the student will be sufficiently content with the school "environment" to persist, that is, graduate with a degree or
some certificate of recognition.

The very real problem faced by admissions committees is to identify the factors related to "success" in college. The two most successfully and rewarding predictors of college success have been academic aptitude (as measured by such tests as the College Entrance Examination Board and the American College Testing program) and high school performance, notably high school grade point average (HCPA) and high school rank (HSR). (Bloom and Peters, 1961; Fishman, 1962)

These predictors are not adequate as Munday (1970) has aptly demonstrated in reviewing several hundred multiple correlation coefficients obtained at colleges and universities throughout the country. In comparing American College Testing (ACT) scores and high school grades with first year college grade point average (GPA), correlation coefficients ranged from .29 to .80.

Since such factors have accounted for only a part of the observed variance in achievement in college, recent emphasis has been placed on studies with personality or "non-intellectual" variables. (Davis, 1965) The necessity for developing such measures has been expressed by Sanford:

For example, as the colleges have more and more students to choose from, and as they continue to use selection devices that have proved successful in the past, the range of talent among those entering the colleges will be progressively narrowed. This means that the tests used in selecting for college will become increasingly ineffective as predictors of doing well, as opposed to doing less well, in college. Thus other tests will have to be found for distinguishing between those able students who are not such good bets. We may expect that more attention will be given to personality factors other than ability, and to factors in the college situation itself, than has been the case in the past. (Sanford, 1962, p. 44)
In addition to improving selection techniques, the college administrators are trying to understand and define the multiple factors behind student satisfaction, presumably related to student attrition. Depending on the effectiveness of the selection criteria, once the student enrolls in the college, he becomes a potential drop-out. And that drop-out rate remains high, particularly during the freshman year. (Chickering, 1969)

Generally, the rate of attrition is due in large part to motivational changes within the individual student. A percentage of student drop-outs is caused by external pressures, such as economic difficulties, illness or marriage plans. Such causes are responsible for changes in motivations. However, there is a much larger percentage of students who leave a particular college because they found their experiences unrewarding or unfulfilling. The logical implication for college administrators is that if a student attends a college congruent with his needs, desires, and wishes, he will find college to be a more satisfying experience and thus, increase his chances of being "successful" in college. Hawks (1964) has hypothesized that the expectations held by incoming freshmen regarding the college experience are variables influencing success in college. And Pervin (1966, 1967) demonstrated that satisfaction and perceived self-environment similarity are factors that relate to achievement and attrition in college.

As more students continue through the entire college experience, it becomes increasingly important to know which institutional characteristics are associated with how much a student learns during his college years.
Such information is not only of concern to researchers and theorists, who are attempting to understand how and to what extent college characteristics influence behavior, but additionally, to college administrators who require such information for decisions concerning the optimum allocation of limited funds and resources among competing educational programs and processes. Many differences in expenditures and resources among colleges have been documented, but little is known as to whether those differences are associated with differential achievement of students. (Astin and Holland, 1962) In addition, the recent increase in student population has also been accompanied by an ever-increasing cost to both public and private colleges. Thus an increasing need exists for evaluating the potential payoff, or output, of differential funding policies.

Much of the present research literature addresses itself to the problem of "fit" between the college student and the college environment. This research generally pursues several fields of inquiry. The least formal method is the compilation and publication of descriptive analyses or vignettes of schools by trained observers for the general public. Matching of student to institution is left to the student and/or parents. Objective criteria such as cost, size of campus, male-female ratio, average achievement scores, kind of school, etc., are presented along with several paragraphs about the campus and the college environment. Correlational analysis, a more systematic method, tries to make associations between student input characteristics (attitudes, values, expected achievement performance, sex, age, religion, measured ability, etc.) and university output characteristics (number
of Ph.D. aspirants, percentage of faculty doing research, number of books in the library, student attrition rate, size of campus, etc.) More formally, specific environmental assessment techniques have been devised to measure the perceptions, expectations, behaviors, and the actual objective environment of the college. Several instruments are being used to study the multi-dimensional interrelationships within the college environment. Another method of approach centers on the nature of individual student change and stability during matriculation. Often, a theoretical orientation focusing on the personality development is used to analyze this change and stability. This theoretical orientation describes the phenomena with concepts such as: personality growth, natural growth, increase in level of maturity, self-actualization, resolution of identity crisis, and stabilization of ego identity and similar phases. (Katz, 1968; Chickering, 1969; Feldman, 1972)

A brief overview of research evidence demonstrates that the present rationale for selective admissions at the college level is not supported by the available documented facts. More comprehensive evaluation research on the facets of the student-university-environment would enable students to make more informed choices among institutions, and would permit institutions to develop those programs which are most appropriate to the students' educational objectives. (Astin, 1970)

DEFINITION OF TERMS

Certain terms and concepts that are of basic importance to this study are defined below:

College, university, or institution—Will be used interchangeably
unless specified or capitalized, since most of the literature does not distinguish one from the other.

**College environment**--The nature of the institutional reality, its members and structures and practices; the total college-related experience of the student during the period between the measurement of his expectations and perceptions. Both formal and informal, academic and nonacademic, aspects of college life are included.

**College Characteristics Index (CCI)**--An instrument consisting of 300 questions yielding mean scores for 30 scales and 11 subscales, describing the college environment, expected or perceived.

**Expectations**--Anticipations of the nature of the university experience, including anticipated institutional reality, the anticipated student's own behavior and the anticipated behavior of his peers, teachers, administrators and other university personnel. The resulting measures of expectations are referred to as E-Scores.

**Perceptions**--Awareness and cognitive organization of objects, qualities, or relations of the total college environment. The resulting measures of perceptions are referred to as P-Scores.

**Absolute difference**--Sum total of real score differences or changes between expected environment (expectations) and perceived environment (perceptions) for each of the 11 subscales of the CCI. The resulting measures of difference are referred to as C-Scores.

**Incoming freshman**--A student entering South Dakota State University during the Fall quarter, 1971, and also registering as a freshman during September 14 and 15, prior to September 16, the first day of classes.
STATEMENT OF PROBLEM

The general thesis underlying this study is that a student's absolute change between expectations and perceptions of a college environment is related to his performance and sex.

Two null hypotheses were generated. The hypotheses as related to the methodology and the CCI instrument of the study were:

1. There are no significant differences in the freshman change or C-score on the basis of sex of the student.

2. There are no significant differences in the freshman change or C-score on the basis of grade point average grouping.

The population was divided into three groups with male and female subdivided within each group: high performers, average performers and low performers.

The expectations and later perceptions of the South Dakota State University environment by the population of freshman was measured using the CCI with modified instructions. In order to investigate the relationships among change scores, it was necessary to group the data into mean scores for 11 definable factor change scores.

The objectives were not to identify specific expectations-perceptions changes as they are related to academic achievement. Instead the extent to which these factors are associated with academic achievement was determined.

SIGNIFICANCE OF THE STUDY

This study was divided into two types of research: (1) replicating previous related research with some improved methodological
considerations, and, (2) exploratory, through the use of a change score to measure the degree of expectation and perception change that had occurred in freshman students and a concomitant observation of the relationship of this change to the students' academic performance at South Dakota State University.

The change score is a measure that has not been utilized in the original and subsequent use of the CCI. However, if research on the impact of college experiences on the student is discussed in terms of changes or differences, i.e., comparing mean scores, standard deviations and their statistical derivatives, then change should be more exactly defined. For example, the C-score will generate the actual absolute number of changes that have occurred using 300 questions of the CCI as the entire measure of the student's expectations and perceptions. If, in a retest experience, one student's responses to 100 questions about the university environment changed, it can be reported that 33 1/3 percent of the student's expectations have changed after one semester.

STATEMENT OF THE "C" SCORE

In researching the changes and stability that have taken place in college students as a result of their college experiences, college personnel and theorists usually refer to these changes in continuous terms rather than discrete or discontinuous terms. Personality changes such as "need for autonomy" or "sociability" are discussed and interpreted in terms of an increase or decrease in maturity according to the direction of change.
Inferences are drawn about that variable which liken it to an ordinal variable. An ordinal variable is a property defined by an operation which permits the rank ordering of the members of a group. Thus, not only are statements of equality and difference possible, but also, statements of greater than or less than. (Ferguson, 1966, pp. 10-16)

In applying such a (developmental) theory to educational problems, we can proceed in two ways. One is to focus on some aspect of the individual, and to ask what conditions and processes favor—or hamper—his development. The other is to examine different features of the college environment—the curriculum, the methods of teaching, organization of teacher-student relations, living arrangements, extracurricular activities, activities of administrative officers—and ask with respect to each, what contributes and how might it contribute more to individual development. (Sanford, 1968, p. 864)

With both procedures environmental differences among and within colleges become analytically important insofar as they impinge on personality change and stability. But a measure of effect or change requires that it be discussed in more definable and exacting terms than sameness or difference. It becomes necessary to use concepts such as amount or degree of change, and amount or degree of effect.

Student variables or institutional variables under observation become identified as interval variables. An interval variable is a property defined by an operation which permits the making of statements of equality of intervals in addition to statements of sameness or difference, or statements of greater than or less than. (Ferguson, 1966, pp. 10-16) In a statistical sense, an ordinal variable may be described as a qualitative variable and an interval variable as a quantitative one. Change and stability can be observed in quantitative terms, i. e., amount
or degree. The absolute change score or C-score is an approximation of this type of variable. It is a more precise measure of effect and change.

DESIGN OF THE STUDY

Expectations were measured by administering the CCI (Stern, 1969) to a sample of the population of incoming South Dakota State University freshmen students. The instrument was administered during the Fall registration prior to the beginning of classes. Perceptions were measured by readministering the CCI during the Spring semester, 1972. Responses to individual items were grouped into 11 factors. Each student was placed according to his grade point average after the Fall semester, into one of three groups: high performers, average performers and low performers. Group mean responses as measured by change scores were related to grade point average performance for male and female freshmen students.

LIMITATIONS OF THE STUDY

The scope of this research is necessarily limited. Following are the limitations which should be recognized:

(1) The population observed in this case involved freshmen students at South Dakota State University. The university services primarily the midwestern geographical region with approximately 90 percent of the students South Dakota residents. The findings involved in this research therefore are pertinent only to this particular group of students at this particular institution.

(2) The investigation effort is limited to an exploration
of the relationship between change scores and freshmen sex and GPA performance. Relationships with other factors and combinations of factors (such as high school grades and/or class rank and achievement test scores) and analyses over longer periods of performance in college do appear to be possible avenues for further research, but are not the subject of this study.
Chapter 2

REVIEW OF THE LITERATURE

The review of the literature is divided into three sections. First, a brief review of the psychological theories relevant to the construct of expectation is presented. The second section surveys the environment assessment instruments developed to measure the environment and impact of a university. The final section reviews the literature related to intellective and non-intellective factors of academic achievement in college.

THEORIES RELEVANT TO THE CONSTRUCT OF EXPECTATIONS

Aspects of many psychological theories are relevant to conceptualizations of this study of college student expectations. In an effort to review some of the major theoretical constructs dealing with expectations, an eclectic survey of the literature was made. Only those aspects of theories which were most relevant to expectancy have been described.

The hypothesis of a relationship between a freshman's expectations, perceptions and subsequent changes over a period of time to his academic achievement in college is based upon a more general hypothesis, i.e., that a person's expectations are related to his behavior and to his subsequent perceptions.

Henry Murray's (1938) study of need-press theory provided an integrated conception of person-environmental determinants of behavior
and served as a theoretical basis for the construction of several environment assessment instruments. His formulations and categorizations of need consider the anticipations of future (i.e., the expectancy) as an arousal of action. George Kelly's (1955) emphasis on cognitive formulation of anticipatory constructs relates well to a consideration of college expectancy in the incoming freshman. Cognitive dissonance theories and learning theories give particular emphasis to the concept of expectancy as a "core" motivational force in personality.

Henry Murray—Personology

Most American personality theorists have recognized that the whole organism is better understood through an integrated conceptualization whereby the individual and environment are considered the precipitating factors of behavior and emotion. Henry Murray's personality (1938) has been particularly important in describing this interaction. His taxonomy of need and press has generated volumes of research in several sciences of human behavior. Also he has generated theoretical foundations that have evolved into environment assessment scales.

Murray's concern was with the individual as a whole organism. He believed that the individual is better understood by observing the nature of his existence within his environment along with a consideration of his past history. The history of the organism is that organism, and this history is characterized by alternative states of activity and rest. The organism is engaged in an "infinitely complex series of temporally selected activities from birth until death." (Murray, 1938, p. 39) Internal factors such as needs, drives and propensities promote
that activity in the individual. But his behavior must be understood in the context of the environmental situations or conditions. The stimulus situation is that part of the environment to which the individual attends and reacts in a consistent and directed manner.

Stimulus situations, classified according to the kind of facilitating or obstructing effects that they can exert, are tendencies and potencies in the environment referred to as "press". Gratification or lack of gratification is a response-mediating force, where the organism reacts to a stimulus situation as a patterned, meaningful, whole organism, and in a directional, developmental, survivalistically purposeful manner. In the ultimate sense, press refers to the phenomenological world of the individual, i.e., the unique and inevitable private view each person has of the events in which he takes part. The press is defined as:

... directional tendency in an object or a situation. Each press has a qualitative aspect—the kind of effect which it has or might have on the subject—as well as the quantitative aspect, since it's a power for harming or benefiting, varies widely. The process in the subject which recognized what is being done to him at the moment (that says "this is good") may be conveniently termed pressive perception. The process is definitely egocentric and gives rise to some sort of adaptive behavior. (Murray, 1938, p. 130)

Murray made a very important distinction in defining press. "Alpha" press is the press that actually exists as far as scientific inquiry can determine. It is the judgments of disinterested, trained observers. "Beta" press is the subject's own apperceptions, his own interpretations of the phenomena he perceives. When there is a wide divergence between alpha press and beta press, Murray considers this delusion.
The gratifications or non-gratifications (frustration) of a need may be decisive in determining the direction of the behavior and the development of that organism. Personality is viewed as both consistent and changing. It is marked by rhythms of assimilation, differentialism, and integration.

The dynamics of Murray's personology are primarily likened to a motivational psychology. "... The most important thing to discover about an individual... is the directionality of his activities, whether mental, physical or verbal." (Murray, 1951, p. 276) Murray's representation of directionality as a motivational process has led to the most complex and carefully delineated system of motivational constructs in contemporary psychology. (Hall and Lindzey, 1957, p. 171)

Murray viewed all behavior as motivated. The needs of the individual supply the stimulus and activate a drive which results in behavior. Need satisfaction results in tension reduction. Murray postulated that the organism has an innate need to create tensions which it can then reduce, with a resultant satisfaction. Needs refer to organizational tendencies which give unity and direction to a person's behavior. There exist two types of needs: primary or biologically induced (viscerogenic) and secondary or learned (psychogenic). Other distinctions are also made: proactive versus reactive, focal versus diffuse, and process versus modal.

The organism schedules behavior in a hierarchical order, first satisfying prepotent (compelling) needs. Murray postulated different categories of needs:
(a) needs pertaining to ambitions, power and prestige; such as the need for achievement

(b) needs pertaining to actions associated with animate objects; such as the need for others

(c) needs in service of defense of status and humiliation-avoidance; termed the need for infavoidance

(d) needs related to human power exerted, resisted or yielded to; such as dominance or autonomy

(e) sado-masochistic needs of aggression and abasement

(f) needs related to affection between people; such as affiliation, rejection, and possibly play

(g) complementary needs of cognizance and exposition

After considerable modification and elaboration, Murray constructed a list of some 30 classified needs.

Specifically, a need is defined as:

... a construct which stands for a force in the brain region, a force which organizes perception, apperception, intellect, conation and action in such a way as to transform in a certain direction an existing, unsatisfying situation. A need is sometimes provoked by internal processes, but more frequently by the occurrences of one of a few commonly effective press (or by anticipatory images of such press). ... (This) leads the organism to search for or avoid encountering, or when encountered, to attend and respond to certain kinds of press. ... Each need is characteristically accompanied by a particular feeling or emotion. ... (which) gives rise to a certain course of overt behavior. ... (which) brings about an end situation which stills the organism.

(Murray, 1938, p. 124)

The personal integration of need and press is termed the "thema" which is the single related pattern of need and press. The thema is derived from infantile experiences and gives meaning to the largest part of the individual's behavior. The situations that
facilitate a particular need state can be represented in a molar fashion by means of this concept.

Murray's formulations of need and press provided for an integrated conception of the personal and environmental determinants of behavior. This is accented by the following quotations from Murray regarding his conception of "expectancy" in human motivations:

Man is a "time-binding" organism; which is a way of saying, that, by conserving some of the past and anticipating some of the future, a human being can, to a significant degree, make his behavior accord with events that have happened as well as those that are to come. Man is not a mere creature of the moment, at the beck and call of any stimulus or drive. What he does is related not only to the settled past, but also to shadowy preconceptions of what lies ahead. Years in advance he makes preparations to observe an eclipse of the sun from a distant island in the South Pacific and, lo, when the moment comes he is there to record the event. With the same confidence another man prepares to meet his god. Man lives in an inner world of expected press (pessimistic or optimistic) and the psychologist must take cognizance of them if he wishes to understand his conduct or his moods, his buoyancies, disappointments, resignations. Time-binding makes for continuity of purpose. (Murray, 1938, p. 49)

Furthermore,

A need is clearly an emergence from the immediate past, or as Schopenhauer would have it, a "push from the rear" rather than a "pull from the future." The environment may, of course, be effective in arousing this "push", and to consciousness the field that lies before its vision or the imagery which seems to anticipate such a field commonly appears in the guise of a pull, positive incentive, or attraction. We should say that the notion of an attracting or repelling object (press) is a necessary complement to the need concept; also that some reference to a possible future is an intrinsic determinant of the moment. But the future does not exist. There is merely the present situation with a field extending before the subject either as meaningful, patterned percepts or meaningful, patterned images. The laying out of images "ahead of time" expresses the aspect of human experience which is designated by the words "anticipation," "expectation," and "hope." (Murray, 1938, p. 68)

And finally,

Instead of saying that all behavior is a search for pleasure, it seems better to say that all behavior is the riddance (or avoidance) of painful tension, encouraged perhaps by pleasure-
George Kelly—Constructive Alternativism

A theory which provides a framework for ordering the phenomena observed in the study of expectations and perceptions is Kelly's psychology of personal constructs:

Man looks at his world through transparent patterns and templates which he creates and then attempts to fit over the realities of which the world is composed. . . . Let us give the name "constructs" to these patterns that are tried on for size. They are ways of constructing the world. They are what enables man, and lower animals too, to chart a course of behavior, explicitly formulated or implicitly acted out, verbally expressed or utterly inarticulate, consistent with other courses of behavior or inconsistent with them, intellectually reasoned or vegetatively sensed. (Kelly, 1955, pp. 8-9)

Kelly elected to establish man in this scientific likeness, where each individual, in his own perceptual way, seeks to predict and control the course of events in his life. The individual struggles to structure the reality so that his own world would be more organized.

The term "construct" which defines a particular dichotomy or similarity in reality, referred to patterns in an individual's life. Kelly's theory of personal constructs brought cognitive elements into interaction with the individual's social world. A conceptualization results which is organized into an understanding of self, personality, psychological development, defenses, etc.

The constructs are seen as attempts by the individual to predict events and test their validity. Kelly assumed that cognitively, all present interpretations of the universe are subject to prediction and alternative predictions. This aspect of a reality is termed "constructive alternativism."
Kelly's fundamental postulate is that "a person's processes are psychologically channelized by the ways, i.e., constructs formed, in which he anticipates events." (Kelly, 1951, p. 46) A person seeks to anticipate events so that he can predict and control. Kelly states that he follows Dewey (1910) in emphasizing the anticipatory nature of behavior. If a person's anticipations are in error due to faulty perceptive constructs, his predictions will be unsuccessful, thus leading to ineffective behavior. The degree of ineffectiveness is a function of the extent of predictive error and the efficiency of reconstruction or replacement of more appropriate constructual anticipations.

Kelly's emphasis upon constructual anticipation of future events and restructuring after an event lends itself readily to a formulation of a theory of freshmen expectations and their restructuring in the college environment. For example, the student's "processes" (Behaviors) will be psychologically chronologued by the ways in which he anticipates events (Expectations). An incoming freshman who has had no direct college experience or varying degrees of peripheral experience assumes certain constructs regarding the nature of the impending situation. His behavior in college may be affected by his anticipatory constructs.

**Cognitive Dissonance Theories**

Analysis of cognitive processes by social psychologists serves two distinct functions: first, the development of methods and techniques for the description of social interactions and social incentives; and
second, the provision of explanations for motivational forces which trigger behavior and determine its direction. (Zajonc, 1968, p. 320)

The core concept in cognitive dissonance theory (Festinger, 1957) is that the existence of non-fitting or dissonant pressure among cognitions is a motivating force. The existence of dissonance gives rise to pressures to reduce the dissonance and avoid increase in dissonance. Festinger defines a "cognition" as any knowledge, belief or opinion about the environment, oneself, or one's behavior. Accordingly, perceptions are defined as cognitive elements.

The amount of dissonance associated with a given cognition is a function of the importance given to that cognition and the one with which it is dissonant. The magnitude of dissonance is a function of the ratio of dissonant to consonant cognitions whereby each cognitive element is weighted in terms of its subjective importance. Dissonance increases as a function of the number and/or importance of dissonant cognitions and decreases relative to the number and/or importance of consonant cognitions.

The existence of dissonance is psychologically painful, and the organism will be motivated to reduce dissonance and achieve consonance. In addition, the organism will avoid information and situations which are likely to increase dissonance, and move toward information or situations that increase consonance. To eliminate dissonance, the organism may alter his cognition (opinions, attitudes, feelings); actively change the environment (leave); regard the person who disagrees as not comparable to himself; or inaccurately and inappropriately distort his perceptions.
Theories of cognitive dissonance are applicable to the concept of expectancy insofar as expectations are or are not substantiated by future reality. Expectations may be important enough to introduce a state of consonance or dissonance in the student. A student may be dissatisfied to the extent that he is motivated to eliminate dissonance by changing the environment. The greater the dissonance, the greater the magnitude of dissatisfaction, and the more the student may do to alter the situation. The difference between expectations and later perceptions of the university environment may be a psychologically painful experience.

Brehm and Cohen (1962) summarized several research studies on Festinger's theory of cognitive dissonance. They called attention to the important role that commitment plays in the arousal and reduction of dissonance.

Commitment occurs when a person engages in or selects an activity which results in an increased resistance to change of a corresponding cognitive element. Brehm and Cohen believe that attending to the role of commitment in the theory of cognitive dissonance aids in specifying what is consonant and what is dissonant. Commitment aids in specifying ways in which a person may try to reduce dissonance.

When an individual develops an expectancy about a given outcome only to discover that what he expects fails to materialize, he suffers a disconfirmed expectancy. (Zajonc, 1968) A special and interesting case of disconfirmed expectancy has been observed in connection with an individual's view of himself. Using cognitive dissonance theory, Aronson and Carlsmith (1962) hypothesized that when an individual's
conception of his ability for a given task is in conflict with his actual performance, dissonance exists. If the individual is unable to adjust to the view of his own ability (that is, revoke previous conception), the alternate means of reducing dissonance is by modifying his behavior.

The Aronson-Carlsmith hypothesis is dependent upon that cognition an individual has psychologically prepared himself for and later finds himself in conflict with, since the event failed to materialize. Extending Brehm and Cohen's (1962) considerations, the more investment placed by the individual in the event, the greater should be the dissonance.

Aronson (1960) extended the dissonance theory to include the conceptual implications behind construct expectancy and increased its importance as a motivational force. Confirmation and disconfirmation of expectancies is thought to be one of the central motivating forces in human behavior.

The role of disconfirmed expectancies seems to be considerably more general and critical to the interpretation of dissonance effects than was originally thought. (Zajonc, 1968)

**Achievement Motive Theory**

Using the theory of "level of aspiration" as a model (Lewin, Dembo, Festinger and Sears, 1949), McClelland and associates (1953) combined constructs of motivations and expectancy into one major theoretical formulation called the "achievement motive." Generally classified as a "core" motive of behavior, it has undergone intensive
research since its introduction into the motivational field of Social Psychology. Derived mathematical equations have become very functional in defining accurately the achievement motive when combined with terms such as: tendency to achieve success, tendency to avoid failure, incentive of success at a particular activity, subjective probability of success, subjective probability of failure, and negative and positive incentive value of failure. (Atkinson and Feather, 1966)

In essence, the authors maintain that the achievement motive makes the person satisfied with success while the failure avoidance motive creates a sense of shame at failure.

Motives can be distinguished primarily by the type of expectation involved and secondarily, in terms of the types of action which confirm those expectations in varying degrees and yield positive or negative effects. (McClelland, et al., 1953, p. 76)

The general theoretical propositions of achievement motive are applicable to the research problem of expectations if the assumption is made that college attendance represents goal directed behavior, and that this behavior is in direct response to a felt need. Achievement expectations develop as a result of interaction between the individual, expectations and behavior in the environment so that negative and positive effects and changes are in fluctuation. A behavior model (Figure 1) which links need, expectation and behavior may be constructed according to the constructs of achievement motive.
### Components of Expectancy

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<th>Need</th>
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<th>Behavioral Response</th>
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<td>expected behavior to attain goal</td>
<td>instrumental activity leading to expected goal attainment</td>
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<td>expected frustration in attaining goal</td>
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<td>expected behavior ending in goal frustration</td>
<td>peer and institutional behavior</td>
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<td>expected environmental supports in obtaining goals</td>
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<td>expected blocks in the environment</td>
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Figure 1. Theoretical Expectancy Model As Per Formulations Of Achievement Motivation


Learning Theory

The construct of expectancy has been variously defined by psychologists working in learning theory. MacCorquodale and Meehl (1953) considered expectancy the basic element of learning. Kimble (1961) provided evidence of many ways that expectancy has been defined by Dewey, Pavlov, Mowrer, Toleman, Hull, Lewin and others. The major difference with operationally defined constructs of expectancy seems to be in perspective of indicating the relationship between the organism and the goal. Some theorists view the organism as a passive observer of a given goal whereby expectancy of certain attributes is derived from past experience. Other theorists view the organism as contributing to the attributes of the goal. Based on the organism's expectation, these goal attributes serve as major determinants of behavior.

Social Learning Theory

In formulating a social learning theory of personality, Rotter (1954) observed that individuals frequently describe their own behavior as anticipations of future events:

The occurrence of a behavior of a person is determined not only by the nature of the importance of goals or reinforcements, but also by the person's anticipation or expectancy that these goals will occur. Such expectations are determined by previous experience and can be quantified. (Rotter, 1954, pp. 102-103)

Rotter defined expectancy as "... the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations." (Rotter, 1954, p. 107)
The basic concepts of his theory are: behavior potential, expectancy, and reinforcement value. Essentially the three basic concepts are related in the following way: the potential that any behavior will occur in a given situation is dependent on the individual's expectations concerning the occurrence of reinforcement in that situation and the value that the reinforcement will have for him. (Berger and Lambert, 1969)

While similarities exist among theoretical considerations of expectancies, no true consensus seems to have been established. Stogdill (1963) in reviewing the literature concerning expectation theories, contends that it is difficult to find any definition of expectations except in terms of synonyms such as: "expectancy," "set," and "anticipation." It is apparent, nevertheless, that the construct of expectancy has been accorded considerable importance by a number of theorists.

The relationship between a freshman's expectations and behavior and perceptions can be considered within the constructs of expectancy theories. The student attends college because his cognition has led him to expect a desired outcome with acceptable probability. His specific acts of behavior are due in part to expectations. Some of the expectations will be reinforced while others will not be reinforced. Their effect is dependent on how much the student values the desired goal, does not value the unexpected result, and is motivated to change behavior or environment.
ENVIRONMENT ASSESSMENT INSTRUMENTS

Since the number of colleges and universities in the United States is great, researchers have found it necessary to classify them into more manageable categories. After exhausting conventional classification techniques such as demography, theorists and college personnel turned to developing and using environmental assessment instruments.

It had become evident that the demographic characteristics of a school might not be as important in effecting student change and stability as they were in creating conditions which in turn are the impact forces. (Feldman, 1970) It was observed among theorists and personnel of college admissions offices that scientific or theoretical relevance did not and would not exist in college impact studies unless explanation and prediction of events were possible.

In comparative studies of college impact, environmental measures function chiefly to provide a basis for interpreting differential effects. Within and between measures of college environment began to resemble personality inventories designed for assessing traits of individuals. (Astin, 1970)

The various instruments embody three conceptually different approaches to the assessment of environmental characteristics: (1) images approach where observers (usually students) are asked to report their impressions of what college is like; (2) the student characteristic approach based essentially on an interpersonal theory of environmental influence with the objective to assess the average or modal characteristics of the students at each institution; and
(3) the stimulus approach developed as an alternative to the first two. (Menne, 1967; Astin, 1970a, 1970b)

Another impetus to the development of environment assessment techniques was becoming clearly visible. The contemporary events on campus (student movements, violence, demonstrations, etc.) implied most forcefully that the determinants of student behavior needed to be sought in the characteristics of the environment and the interaction of these characteristics with individual student traits and abilities. The search for individual characteristics in vacuo can lead only to partial understanding or to no understanding at all. (Mitchell, 1969)

The intent of this review of literature is not to detail the development of the instruments and consequent studies, not to evaluate the techniques, but merely to introduce the many assessment instruments available to researchers and college personnel.

Environmental Assessment Techniques

As one remedy to the problem involved in using conventional demographic classification such as size, location, population, etc., Astin and Holland (1961; Astin, 1963b) developed the Environmental Assessment Technique (EAT). Essentially based on an interpersonal theory of environmental influence, the EAT has the following eight measures of student characteristics: institutional size, intelligence level of the student body, and proportion of students in one of six types of major fields. These fields are labelled: realistic, intellectual, social, conventional, enterprising and artistic. The six fields were suggested by Holland's (1959) work on vocational choice.
After several revisions, six principal dimensions whereby institutions may be said to differ were proposed: affluence, size, private versus public, masculinity versus femininity, realistic (or technical) emphasis and homogeneity. However, Astin found little relationship between these measures and choice of career or drop-out rate. This led him to conclude that pre-college student characteristics were more important than the college environment. (Stern, 1970)

Another group of studies exploring student input dimensions (Astin and Nichols, 1964; Astin, 1964b) culminated in the extraction of six student factors from 52 input variables based on the responses of 127,212 freshmen at 248 colleges. The six factors were: intellectualism, aestheticism, status, leadership, masculinity and pragmatism. These factors were identified along with input data reflecting background characteristics, past achievements and future aspirations.

The student factors and college environment factors were then assembled into two interaction studies. The first showed that the expectations of incoming freshmen are congruent with the characteristics of the institutions they have selected. (Astin, 1964c) The second suggested that career choice over a four year period tends to conform increasingly to the type of career choice dominant in the student's college environment. (Astin, 1965a)

The EAT is essentially based on the interaction rationale. A person's behavior can be replaced by the interaction of his personality pattern with his environment. Thus, persons of a particular type seek vocational environments of the same type. But as Holland maintains
"At this point," being a heuristic theory, its ". . . usefulness. . . is only partially explored."

Inventory of College Activities

Continuing research, Astin (1968, 1969) worked with 35 arbitrarily selected items describing the college classroom and introduced the Inventory of College Activities (ICA). It was developed from the responses of 30,000 undergraduates attending a representative sample of 246 colleges and universities. The ICA yields 25 scores based on "objective" student reports of observable environmental stimuli. In addition the ICA yields eight image factors based on subjective student impressions of their college. The 33 ICA environmental measures accounted for a substantial proportion of differential student impact on the students' educational and career plans. (Astin and Panos, 1969)

College and University Environment Scales

In constructing a different instrument, College and University Environment Scales (CUES), C. Robert Pace (1963) modified the CCI on the basis of a conceptual approach that directly analyzed environmental differences between institutions. It was developed without reference to any specific personality measure. Pace attempted to identify dimensions along which colleges differ from one another, and to measure these dimensions by a set of items that most clearly and sharply reflect these differences. The five CUES scales are labeled: practicality, community, awareness, propriety, and scholarship.
College Characteristics Analysis

The College Characteristics Analysis (CCA) was also developed by Pace (1960b) from a factor analysis of rank order correlations between scale means of the 32 schools in the CCI norm sample. The 210 items reflecting four clusters (Humanistic, Scientific, Practical and Welfare) were written and selected to fit a specifically developed outline of educational content. The items represent three separate sources of perceptions of the college environment and relate to inter-institutional factors that would be independent of the characteristics of the students themselves. (Stern, 1970, p. 292) The three sources of environmental press were: (1) the administrative source, referring to rules and regulations, general features and facilities (2) academic or faculty sources of press, referring to characteristics of faculty members, courses and curricula, and instructional practices and demands, and (3) student sources of press, referring to student characteristics, informal activities, interests and extracurricular programs. (Pace, 1969)

Transactional Analysis of Personality and Environment

Pervin (1967a, 1967b, 1968) has shown the generally high reliability, validity and usefulness of a college environment assessment instrument based on the semantic differential scale as developed by Osgood, Suci and Tannenbaum (1957). This scale is called the Transactional Analysis of Personality and Environment (TAPE). The TAPE research represents an effort to study individual-environment interaction through student perceptions, parts of the college environment
J4 and the college environment as a whole. The standard form of TAPE requires that each of the following concepts be judged on the same 52 scales: My College, Self, Students, Faculty, Administration, and Ideal College. For each concept, an explicit definition is given. According to the author TAPE appears to hold considerable promise for intra- and inter-institutional research.

**Inventory of College Characteristics**

Employing 180 items from the CCI, Nunnally, Thistlethwaite and Wolfe (1963) introduced the *Inventory of College Characteristics (ICC)*. These authors divided the 180 CCI items into two categories: college student perceptions of fellow members and college student perceptions of faculty. This image perception approach for describing the college environment was used to identify items and item combinations which were related to the criterion index, namely, the institutions' production of future doctorates in the natural sciences and in the arts, humanities and social sciences. The instrument yields 33 press scales which can be grouped into nine factors.

**College Student Questionnaire**

The *College Student Questionnaire (CSQ)* is a 70 item instrument designed to measure the satisfaction and dissatisfaction of college and university students. (Peterson, 1965) The CSQ is based on the assumption that students are the college and a typology of student subcultures would define that college. Impressions gained by Trow (1962) from visiting several campuses led to the speculation that four main types of campus subcultures existed: vocational, collegiate, academic, and nonconformist.
In the CSQ the characteristics, values and orientations of each of these is presented to students in brief paragraph descriptions. The student is asked to indicate which description comes closest to reflecting his values and interests, which comes next closest, etc. Satisfaction is measured on five scales: working conditions, compensations, quality of education, social life and recognition. A total satisfaction score is also obtained.

**Medical School Environment Inventory**

Another derivative of the CCI is the Medical School Environment Inventory (MSEI). Hutchins (1961) has devised and used this instrument specifically for medical schools and has sampled 25 medical schools for norm development purposes.

Despite differences in approach, strategy and assumptions, and item content, there appear to be some general similarities in the various college environmental assessment instruments. All the investigations contain some type of an intellectual or scholarly dimension. This dimension is indicated by perceived environmental press for academic achievement, or scholarship, intellectual orientation of students, academic relativity of the institution and the importance of getting acceptable grades. (Pace, 1969)

In general, the degree of similarity of the different environmental assessment instruments and techniques is expressed in correlations coefficients of between .40 and .60. These correlation coefficients suggest that the environment instruments have not produced identical results. However, the correlations make it impossible to argue against
the existence of some similarities among the instruments.

**Syracuse Instruments**

The psychological environment may be defined as the complex of stimuli that press upon the individual and initiate behavioral responses. These impressions of stimuli are theoretically unique and private in each individual's view of the world. However, as observers we tend to draw conclusions of our own regarding the meaning of the events for someone else. We also tend to organize and classify discrete events on the basis of seemingly common elements. With this in mind, Stern and associates have introduced several environment assessment techniques and instruments for systematically observing and analyzing the impact of institutions.

All environment instruments designed by Stern and associates are based on Murray's need-press model where behavior (B) is viewed as the outcome of the relationship between the press (P) and his environment (E). This model is firmly based on the theory of Lewin: $B = f(P, E)$.

Stern (1970) goes on to discuss the interaction of need and press in terms such as: congruence versus dissonance, and anastatic function of needs corresponding to anabolic press or antithetical function of need corresponding to a catabolic press.

Broadly speaking this model lends itself to the study of distribution and personality behavior within social organizations in a psychological sense. This study is known as psychonomics. According to Stern, this model can be used to predict the effects of selection...
and of organizational change on morale and output (grades or production). This model is also applicable "to the investigation of dyadic interactions in the intervening situation, therapy, mate selection and marriage."

(Stern, 1970, p. 9)

H. A. Murray (1938) provided a taxonomy for classifying environmental pressures and the characteristic ways in which an individual strives to structure that environment for himself. Briefly, Murray called external pressures "press" and their internal counterparts "needs". Both needs and press are inferred from characteristic activities and events. Needs are inferred from things that the individual typically does and press from things that are typically done to the individual in some particular setting. Stern developed the Activities Index (AI) and the College Characteristics Index (CCI) for the measurement of need and press respectively. Later instruments followed these models.

The prototype for the AI, the Interest Index, was constructed in 1950-51. This was patterned after an inventory by Sheviakov and Friedberg (1939) which suggested the format for a "needs" measure. It was designed as a systematic representation of variables stemming from the explicit personality theory and taxonomy of H. A. Murray.

The Interest Index was developed from a pool of over a thousand items which described those commonplace daily activities and feelings which appeared to represent unambiguous manifestations of need processes. After eight psychologists at the University of Chicago independently coded these items, the Index was assembled from items unanimously considered to be diagnostic of specific elements in the need taxonomy.
Subjects were required to respond to these items by indicating their personal preference, rejection or indecision.

Renamed the Activities Index in 1953, it was shortened to 300 items distributed among 30 scales of ten items each. The present version, Form 1158, has been derived from an analysis of preceding forms and can be administered to samples of persons from 12 to 63 years of age in various social and educational strata.

The CCI environment index served as a prototype of several other indices which were not limited to the descriptions of activities and events associated with different types of college settings. The High School Characteristics Index (HSCI) developed in Syracuse in 1960 was administered to the incoming class at Syracuse University during Freshman Orientation Week. (Stern, 1961) Like the CCI, the HSCI was prepared with the environment as the frame of reference. As of 1970, the HSCI was recommended for research use only. However, independent studies have already been published using the HSCI comparing creative and traditional high school classroom environments. (Stern, 1970)

The Evening College Characteristics Index (ECCI) completed in 1961 was designed with the nonresident college, or nonresident college student in mind. It also parallels the CCI closely in format except that the items peculiar to the resident settings are eliminated and replaced with items specifically related to day school or evening college environments. It is also considered appropriate for community colleges or two-year colleges.

The Organizational Climate Index (OCI) represents the first attempt to develop a more general instrument to fill the measurement
gap between primary and secondary school. The present research instru-
ment analyzes formal administrative structures and settings. It has
been used in studies of the Syracuse public school system, Peace Corps
training programs and in industry. (Stern, 1970)

**College Characteristics Index.** C. Robert Pace and George C.
Stern (1958) developed an instrument to identify the educationally and
psychologically functional environment of a college emphasizing the
morphological characteristics of these institutions in much the same
way that the taxonomic schemes of the naturalist are based on the
classification of readily observable parts and pieces of organisms.
Their efforts were directed towards finding better ways of characterizing
the differences between and within colleges as well as the differential
effect of the college experience upon the student. Many theoretical
assumptions and the design of a number of the environment assessment
instruments owe their beginnings to the work of Stern and his associates.

The effect of the college environment on the student goes beyond
the objectives directly or indirectly stated by that institution. In
addition to these formal and informal goals, concern often is expressed
for achieving growth in attitudes and values, personal and social
development, citizenship, civic responsibility, aesthetic appreciation,
and similar supracognitive attributes. In respect to such complex
multiple objectives, Stern emphasized that a college community must be
viewed as more than classrooms, professors, libraries and laboratories.
It is also a network of interpersonal relationships, of social and
public events, of student governments and publications, of religious
activities, of housing and eating, of counseling and of curricular
choices. The college may be regarded as a system of pressures, practices and policies intended to influence the development of students toward the attainment of institutional objectives. (Stern, 1963, 1969, 1970)

Pace and Stern, using AI as a model, narrowed Murray's 44 general variables to 30 independent need-press subscales which tapped college environments. Research provided no rationale for eliminating a portion of Murray's original categories, but it was concluded that a factorial analysis facilitated statistical procedures, reduced fatigue in testing and still maintained the press definitions. The 30 need-press subscales are defined and listed alphabetically below.

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<tbody>
<tr>
<td>2. Achievement</td>
<td>striving for success through personal effort.</td>
</tr>
<tr>
<td>3. Adaptability</td>
<td>Defensiveness: acceptance of criticism versus resistance to suggestion.</td>
</tr>
<tr>
<td>11. Ego Achievement</td>
<td>striving for power through social action.</td>
</tr>
<tr>
<td>15. Fantasied Achievement</td>
<td>Daydreams of extraordinary public recognition.</td>
</tr>
<tr>
<td>17. Humanities, Social Science</td>
<td>Interests in the Humanities and the Social Sciences.</td>
</tr>
</tbody>
</table>
18. **Impulsiveness**--**Deliberation**: impetuousness versus reflection.
19. **Narcissism**: vanity.
20. **Nurturance**--**Rejection**: helping others versus indifference.
21. **Objectivity**--**Projectivity**: detachment versus superstition.
22. **Order**--**Disorder**: compulsive organization of details versus carelessness.
23. **Play**--**Work**: pleasure-seeking versus purposefulness.
24. **Practicalness**--**Impracticalness**: interest in practical activities versus indifference.
25. **Reflectiveness**: introspective contemplation.
26. **Science**: interests in the Natural Sciences.
27. **Sensuality**--**Puritanism**: interest in sensory and esthetic experiences.
28. **Sexuality**--**Prudishness**: heterosexual interests versus their inhibition.
29. **Supplication**--**Autonomy**: dependency versus self-reliance.
30. **Understanding**: intellectuality. (Stern, 1969, p. 16)

Saunders (1962, 1969) extracted 11 environmental factors in a "principal components-equamax analysis" from the 30 subscales of the CCI. Each of the 11 factors is composed of several entire scales and takes on the definition of those scales combined. The following are the 11 environmental factors, also identified as "first order factors," their composite scales and definitions:

1. **ASPIRATION LEVEL** (Counteraction, Change, Fantasied Achievement, and Understanding.) A high score on this factor indicates that the students perceive that they are expected to aim high and are considered capable of making it. They are introduced to individuals and ideas calculated to provide models for intellectual and professional achievement. The processes involving the administration of the school, and given to understand through the receptivity of the central administration that student efforts to make some impact on the environment are likely to be successful.
2. **INTELLECTUAL CLIMATE** (Reflectiveness, Humanities-Social Sciences, Sensuality, Understanding, and Fantasied Achievement.) The items that comprise this factor are intended to reflect the qualities of a staff and plant specifically devoted to scholarly activities in the humanities, arts, and social sciences.

3. **STUDENT DIGNITY** (Objectivity, Assurance, and Tolerance.) This factor reflects administrative concern for the maintenance of a high level of self-determination and personal responsibility among the students. A high score on this factor indicates that the institutional climate is nonauthoritarian and that student conduct is regulated by means other than administrative fiat. There is a minimum of coercion at such schools and the factor responses suggest that students are treated with the respect and consideration accorded any mature adult.

4. **ACADEMIC CLIMATE** (Humanities-Social Science, and Science.) Factor 4 is a less extensive version of Factor 2 (Intellectual Climate), limited specifically to academic excellence in staff and facilities in the conventional areas of the humanities, social sciences, and natural sciences. A high score indicates a great deal of attention to these areas by the school and implies the presence of such facilities as good libraries and laboratories.

5. **ACADEMIC ACHIEVEMENT** (Achievement, Energy, Understanding, Counteraction, and Conjunctivity.) Schools with high scores on this factor evidently set high standards of achievement for their students. Special courses, examinations, honors, tutorials, and so forth, are among the devices employed for this purpose.
6. **SELF-EXPRESSION (Ego Achievement, Emotionality, Exhibitionism, and Energy.)** It is concerned with opportunities offered to the student for the development of leadership potential and self-assurance. Among the activities serving this purpose are public discussions and debates, projects, student drama and musical productions, and other forms of participation in highly visible creative acts.

7. **GROUP LIFE (Affiliation, Supplication, Nurturance, and Adaptability.)** The press scales identified with this factor describe various forms of mutually supportive group activities among the student body. The activities are of a warm, friendly character, more or less typifying adolescent togetherness, but they also reflect a more serious aspect of the college culture as represented in activities devoted to the welfare of fellow students and to other less fortunate members of the community.

8. **ACADEMIC ORGANIZATION (Blame Avoidance, Order, Conjunctivity, Deliberation, Deference, and Narcissism.)** High scores on this factor are achieved by institutions that stress organization and structure in the academic environment.

9. **SOCIAL FORM (Narcissism, Nurturance, Adaptability, Dominance, and Play.)** In some respects this factor represents the formal institutionalization of activities incorporated in Factor 7 (Group Life) on a more informal and spontaneous level. Fifty percent of the Group Life items are in fact shared with Factor 9, but the friendly togetherness of the former is muted here and replaced by a stronger emphasis on proper social form. The items suggest a heightened self-awareness and a consciousness of position and role. Schools
characterized by this factor apparently offer opportunities for the development of social skills. Viewed as technical assets, they might be regarded as the finishing-school counterpart of the vocational atmosphere associated with Factor 11 below.

10. **PLAY-WORK** (Sexuality, Risktaking; opposite of Harm Avoidance, Play, and Impulsiveness.) Schools high in this factor offer opportunities for participation in a form of collegiate life reminiscent of the popular culture of the 1920's as drawn by Scott Fitzgerald, the institutions once referred to as the "fountains of knowledge where students gather to drink."

11. **VOCATIONAL CLIMATE** (Practicalness, Puritanism, Deference, Order, and Adaptability.) The items emphasize practical applied activities, the rejection of aesthetic experiences, and a high level of orderliness and conformity in student-faculty relationships.
   
   (Stern, 1970, pp. 56-58)

The 11 factors can be further divided into three categories or three second-order factors for gross abbreviation:

1. **INTELLECTUAL CLIMATE**, factors 1 through 6.

2. **NONINTELLECTUAL CLIMATE**, factors 6 through 11.

3. **IMPULSE CONTROL**, factors 8 and the scales, Prudishness, Harm Avoidance, Work and Deliberation

The Impulse Control factor may be associated with a measure of emotional construction and maximal institutional control. This may be due to an attitude of extreme coercion or extreme permissiveness in the institution. (Stern, 1970)
Broad values and implications can be induced in this psychological approach to the measurement of the college environment. The authors of the CCI state that potential use of the instrument includes institutional self-analysis, assessment and prediction. The administration and faculty are able to learn something useful about the dynamics of the college environment from the standardized responses to the CCI. Pace and Stern (1958) were the first to employ the CCI as a qualitative measure of the psychological characteristics of a particular college atmosphere. The instrument was validated during this study as a research method which increased understanding of the ways in which an institution influences the students.

The CCI was then introduced as a "broader conceptualization for evaluating the effectiveness of higher education." (Pace and Stern, 1958)

**INTELLECTUAL FACTORS RELATED TO ACADEMIC ACHIEVEMENT**

Fishman (1962) summarizes the predicament with which many colleges are faced in selecting their freshmen class. Colleges have come to depend upon selection techniques that maximize descriptive impartiality and minimize prescriptive implications. This philosophy had its origin in the early development of the Army Alpha examination and is present in today's complicated multiple regression designs.

To avoid misunderstandings in researching the efficiency of predictive criteria for college achievement, Fishman (1962) defines "intellective" and "non-intellective" denotatively and
connotatively as follows: (1) Non-intellective prediction includes personality and motivational tests and inventories, interest inventories, interviews and personal ratings, biographical information and study-habits inventories. (2) Intellective prediction includes aptitude and intelligence test scores, achievement tests, high school rank and high school average.

The usual predictors of college achievement are high school performance, scores on a standardized measure of scholastic aptitude and a personality rating. The average multiple correlation obtained when assessing the usual predictors is approximately .55. With the addition of a personality test score to high school grade point average and/or high school rank, the gain in the multiple correlation is usually less than +.05. (Fishman, 1962, p. 669)

As early as 1927, Odell was researching the predictive efficiency of high school performance to academic success in college. For a student coming from a large high school, Odell stated that the best predictor of academic success for the freshman year in college was academic achievement in high school. He obtained multiple coefficients of correlations as high as .85 for some subjects. "The results of this order are attainable by practically every institution which puts forth a serious and united effort to secure them and that they are distinctly worth the labor and expense required." (Odell, 1927, p. 680)

Brigham (1932) suggested the use of rank in class for the computation of high school standard grade averages, rather than the real grades/averages so that grades from various schools would be more comparable. Toops (1933) proposed that grades at different schools be
equated for students with equal intelligence.

Dressel (1939) proposed the establishment of an efficient predictive model. Using an analysis of covariance design for a sample of 15 high schools, he found a correlation of .52 between high school grades and college grades. The mean within-school correlation was .59. These conclusions have generally been supported. (Calvin, 1949; Travers, 1965) Bloom and Peters (1961) proposed that correlations higher than the reported .40 to .60 can be obtained. Appropriate adjustments were made for differential high school grading practices and correlations ranging from .70 to .85 were found. Bloom and Peters' findings stirred expectations of a major breakthrough in the prediction of college grades, but other researchers applying similar techniques in different settings failed to replicate their results. (Lindquist, 1963; Whatley and Mervin, 1967)

An often-quoted study by Lindquist (1963) added a pessimistic note to the whole area of grade adjustments and predictive techniques. His results suggested that the conditions necessary for a large improvement in the prediction of college grades exist only for selected samples of schools. Linn (1966) organized and summarized predictive techniques into several models: adjustment models, control predictive models, regression models and scaling approach models. Similarly, he concluded that the improvement in predictive validity using adjusted grades as compared to unadjusted grades has generally been discouragingly small. (Linn, 1966, p. 327)

Arvey (1971) considered the effect of grade point average on achievement in college from another point of view. Is consistency of
past performance a factor that should be considered when making predictions about future performance? The hypothesis tested, that consistency influences predictability, has been supported. Using a sample of 200 students and a cross validity sample of 100 students from the University of Minnesota, he concluded that performance variability in high school is a factor in college performance, i.e., the more consistency in high school, the more effective predictability of college performance. Intra-individual variability has been effectively demonstrated as a subgrouping variable in college prediction studies.

Bradly and Sanborn (1971) reported a study attempting to improve past procedures of predictive efficiency of college grade point average through the use of a developmental approach involving repeated predictive measures over four years of high school. The three predictive measures were high school grade point average, high school rank and consistency. Using three independent samples they concluded that the patterns of post-high school academic performance cannot be predicted from longitudinal high school performance.

Besides indices of high school achievement, tests of scholastic ability have been utilized to predict academic achievement in college. Achievement tests have generally proven superior to mental ability tests for prediction of grade point average in college. (Schroeder and Sledge, 1966) There has been a shift in recent years toward the use of tests which directly measure "school-learned abilities" for the prediction of college achievement. (Cronbach, 1960)
Lavin (1965) reported that coefficients for achievement tests generally range from .30 to .70 depending upon the particular test employed, the sample and the institution.

Measures of high school achievement or scholastic ability may be used independently for prediction of college performance. However, better predictive efficiency has resulted in combining these two kinds of measures along with repeated scholastic measures to yield multiple regression equations. Fishman (1962) estimates that such correlations average about .55 while Bloom and Peters (1961) state they range from .55 to .65. Donnan (1968) found that the Verbal and Mathematics scores of the Scholastic Aptitude Test (SAT) correlated about .35 with first year grade point average. High school rank correlated about .45 with the same criterion. The multiple correlation with the first year grade point average was .55.

NON-INTELLECTIVE FACTORS RELATED TO ACADEMIC ACHIEVEMENT

Although intellective predictors have been regarded as the best method of prediction of academic achievement in college, they have accounted for only one-tenth to one-half of the individual variability in academic performance. (Lavin, 1965) Considerable attention has been directed toward the search for non-intellective correlates of academic achievement in college. A number of non-intellective correlates have been identified. Many of these correlates have been reviewed in the professional literature. (Fishman and Pasanella, 1960; Lavin, 1965; Michael and Boyer, 1965; Feldman and Newcomb, 1969)
Stein (1963) has cautioned that research on non-intellective predictors should not be limited to variables which supplement intellective measures of prediction. Instead non-intellective factors should be viewed as independent measures of college performance.

Many kinds of non-intellective variables have been investigated. Studies have focused on biographic and demographic input data describing the student. Additional student background variables that have been investigated include: status, socioeconomic background, family background, age, sex, religion, race, urban versus rural status, size of high school attended and type of high school attended. All of them have been found to possess some relationship to measures of academic achievement. (Stein, 1963; Yonge, 1963; Lavin, 1965) In addition, Lunneberg and Lunneborg (1966, 1970) cited a number of other biographic or demographic variables that have been found to be related to college academic achievement: birth order, type of vocational goal, hours per week spent studying, participation in high school sports and activities, participation in government in high school, academic honors, membership in clubs, positions of office in clubs and personal philosophy of education.

Academic achievement in college has been extensively studied by assessing overall student adjustment and by defining specific attributes of student personality. The general hypothesis generating this research is that the maladjusted student is less likely to do well in college; specific personality characteristics that are in conflict with demonstrated successful students' attributes are likely to hinder a student's rate of academic progress. Both projective and objective
measures have been used in such investigations. The latter yielded more significant results.

Acceptable measures of student personality and overall adjustments are defined according to profile scores within established limits on a standardized personality inventory. Both kinds of measures have been found to possess some relationship to academic success in college. A considerable amount of research has been generated using such instruments as: Minnesota Multiphasic Personality Inventory, Opinion, Attitude, and Interest Survey, Minnesota Counseling Inventory, Manifest Anxiety Scale, Guilford-Zimmerman Temperament Survey, Edward's Personal Preference Schedule, Survey of Study Habits and Attitudes, Strong Vocational Interest Blank, Survey of Interpersonal Values, California Psychological Inventory, Adjective Check List, Personality Record, and Study of Values. (Sanford, 1962; Astin, 1964; Yonge, 1965; Richards, Holland and Lutz, 1967; Feldman and Newcomb, 1969; Dollar, 1970; Harman, 1971)

In spite of intellectual, biographic and demographic input criteria, students often surpass or fall short of their predicted performance. The environmental climate of students must be taken into account before institutional objectives can be realized. (Yonge, 1965; Kamens, 1971; Rock, Baird and Linn, 1972) Perhaps researchers and college personnel are predicting grade point achievement as well as can be predicted without taking the specific college courses, instructors and other institutional variables into account. The failure to effect an improvement in prediction of performance may be due to the limits of the definition of input predictors and output criteria. A distinction
between intellectual predictors and non-intellectual predictors and
corresponding intellectual output and non-intellectual output
criteria cannot be overemphasized. Grade point average, academic
honors, level of aspiration to attain Ph.D., etc., can be distinguished
from personal growth, satisfaction, motivation, post-college interests
and attitudes, development of social conscience, etc. By defining
input and output in intellectual and non-intellectual terms, objectives
and goals will become more definable and amenable to research method-
ology. Also, a higher level of predictive accuracy can be attained and
implemented for more appropriate change and assessment techniques while
the student is in college. High school students will be provided with
a more accurate and detailed basis for not only choosing a college,
but also would be presented with data which would indicate types of
colleges which would be particularly effective with that student. For
example, a college which does not demonstrate above average effect on
achievement for its student population may show above average effect
for low ability students with a motivation problem. A matching effect
can result between student and college.

Research on Satisfaction in College

A recent development in college predictive criteria is revealed
in paperback books about college selection and attendance. Some of the
most popular college guides are emphasizing the importance of
"goodness of fit" between the student and the college. The basic
assumption is that a student will be more satisfied if he chooses a
school with a student population and environment similar to his own
personality, attitudes, interests, etc. Satisfaction becomes an important variable because of implied relationships between such factors as: remaining at a particular college, achieving success in college and adjusting to the scholastic and social expectations. (Rand, 1968) Essentially, these guides share the belief, "know yourself, know the college and match the two." Although guides to college selection recommend different procedures and methods, prediction of student satisfaction with a college choice is an ultimate objective.

So little is known about student satisfaction, dissatisfaction, alienation and disaffection in the college environment, that a systematic study of the relationships seems imperative. More systematic and effective selection of college students is needed with new and improved institutional programs for the undergraduate population.

Rand (1968) tested the "goodness of fit" or homogeneous matching of students to a college theory and its effect on college choice satisfaction. The contention that students who are similar or dissimilar to their own school would be satisfied or dissatisfied was not strictly supported. Rand concluded that the relationship between satisfaction and matching is minimal and quite complex. However, additional research needs to be completed regarding the characteristics of colleges, students, and matching techniques. (Rand, 1968, p. 38)

Astin, in 1963, demonstrated that the student's output is dependent on both student input and the differential impact of an institution on its students. Berdie, et al. (1970) considered student satisfaction as one criterion for determining output of an institution and assessed how a university affects students. Using the Minnesota
Counseling Inventory, Minnesota Multiphasic Personality Inventory, and Strong Vocational Interest Blank, along with the College Satisfaction Index (Roy, 1949) as a measure of satisfaction of students, Berdie, et al. (1970) observed that a large extent of satisfaction is associated with certain characteristics of the students at the time they entered college. Approximately one-third of the student satisfactions within the University of Minnesota can be attributed to personality differences. A student's progress in the university is related to his expression of satisfaction.

The American Council on Education amassed considerable data and research on the problem of matching the college-bound, high school student with an institution of higher learning. (Astin, Panos and Creager, 1966, 1967) Their assumption maximized output criteria or educational objectives, such as persistence in college, motivation for graduate study, realistic career choice, high academic performance, mental health, knowledge and acquired skills, and certain values.

Figure 2 shows that predicted output is a function of the main effect of student input, main effect of college environment and effects of interaction from a particular match between a student and institution.

The Council's purpose was to create a nationwide "directory," where model, homogeneous college environments with homogeneous students and homogeneous alumni would be detailed for high school counselors and college admissions officers. (Creager, 1968) For some groups of institutions and some groups of students, such matching would not only be possible, but also recommended.
College Environments
Variables

Student Body
Intellectual Level
Student Behaviors
Resident versus Commuter

Physical Features
Size
Library
Other Facilities
Curricular Offerings

M A T C H

Student Input Variables
High School Background
Family Background
Abilities
Achievements
Attitudes
Aspirations

COLLEGE
ENVIRONMENT
MAIN EFFECT

Outputs (Criteria)

Academic
Baccalaureate Completion
Plans For Graduate Work

Academic Performance
And Achievement (e.g.,
Graduate Record Exams)

Personal
Values
Interests
Attitudes

Acquired Skills

Aspirations
Field Choice
Career Choice

Figure 2. Predicting Output As A Function Of Student Input Environment Input And Their Interaction
Pervin and Rubin (1967) found that a lack of fit between student and college characteristics may lead to student dissatisfaction with the college experience. The greater the discrepancy between the way a student sees himself and his image of the college, the more he will be dissatisfied. Pervin (1967) investigated the relationship between perceived-self-environment similarity and satisfaction with the environment. Using TAPE, Pervin found a relationship between perceived-self-environment similarity and satisfaction, and demonstrated that the better the "fit" between the individual and his college environment, the more satisfied he will be.

Passons (1971) studied the accuracy of prediction of student satisfaction, as perceived by three samples of university personnel: faculty, resident advisors, and student affairs personnel. Systematic investigation of student satisfaction held promise for student personnel work. Institutions should conduct studies of the relationship between characteristics of entering students, satisfaction with the university at various stages of matriculation, and perseverance toward graduation.

Pervin (1968) discussed satisfaction in terms of an interaction or transactional model and stated that data gave clear support to the theoretical rationale of student-college fit and its correlates of satisfaction and dissatisfaction. This model assumed that for each individual, there are environments (interpersonal and non-interpersonal) which match the characteristics of his personality. A match or best fit (Jahoda, 1961) of an individual to an environment is expressed in high performance, satisfaction and little stress in the student. Lack of fit results in decreased performance, stress and dissatisfaction in
Research on Expectations and Perceptions of College

Expectations held by incoming transfer and freshmen students and their later perceptions about the college environment are non-intellectual correlates that have been recently emphasized in research on college effect. The general assumption is that the expectations an individual brings to a situation significantly influence the manner in which he experiences and copes with that situation. (Pervin, 1966; Shaw, 1968)

The degree of accuracy or the level of reality of expectations held by incoming students has served as a criterion in studies of college environment. Expectations have been compared to the perceptions of independent samples of experienced students or to the students' own perceptions of the college environment after he matriculates. Different techniques, designs, statistical analyses and methodological considerations have been implemented.

Raab (1963) used the CCI along with the AI to: (1) measure the congruence and dissonance between need and press in determining satisfaction and dissatisfaction in the university environment, (2) to determine the environmental press of the university and (3) to determine the various need levels of freshmen and juniors. Raab introduced several methodological considerations relevant to need-press differences within the college. Rowe (1964) administered the CCI to measure environment stability in a pre-post test design. The CCI revealed the expected student reactions to a controversial change in the university environment and defined the perception limits that press.
The amount of congruence between an individual's need and the environmental press is related to his adaptation within that environment. This has been referred to as the need-press hypothesis. (Stern, 1960; Pace, 1961) Standing and Parker (1964) proposed that it is not so much the congruence of needs and the press as it is the congruence of what the student expects and the press he subsequently encounters that more strongly influences his adaptation. This was referred to as the expectation-press hypothesis. Preconceptions of entering freshmen students were significantly higher on fourteen of 30 scales of the CCI than sophomore perceptions of the reality at Brigham Young University. The freshmen anticipated an environment with more achievement, understanding, and objectivity. In a second study, senior high school students who planned to attend Brigham Young University anticipated an environment which was more humanistic, intellectual, and social-group-welfare oriented than was perceived by sophomore students at the University. Residential proximity to the university was not related to accuracy of environmental expectations.

The CCI measured actual changes in the environment that had occurred at Brigham Young University in a pre-post test design. A third study tested the hypothesis that freshmen who dropped out after one semester began college with unrealistic expectations or preconceived notions that differed from preconceptions of students who persisted. No differences existed between drop-outs and persisters after one semester in expectations. But significant differences in perceptions on the second testing were found on seven of 30 CCI scales. (Standing and Parker, 1964, p. 5) These differences could not be
accounted for by academic ability or by college achievement since both were controlled by an analysis of covariance. The persisters characterized the environment as having a more intellectual climate and more faculty concern for students. Standing and Parker concluded that this may be due to dissatisfaction with the environment or lack of contact with experiences similar to that of persisters.

Lauterbach and Vielhaber (1966) made a comparative examination of the need-press and expectation-press hypotheses as predictors of adaptation at West Point. Academic criteria defined by grade point average and military tactics' average and non-academic criteria defined by rating of leadership potential and physical education performance were compared to needs, expectations and press. Measures of need were obtained by instructing incoming cadets to describe what type of environment they preferred. For expectations incoming cadets described the environment as they saw it. The press was obtained from the plebe class as they perceived it. D-statistics were computed to evaluate distance between need, expectations and press. Results indicated that:

(1) Neither need-press nor expectation-press correlated significantly with non-academic criteria.

(2) Expectation-press indices were positively related to academic achievement.

(3) Need-press indices were correlated with each academic criterion in the opposite direction. The less congruent the subject's CCI profile of needs was with the press, the better his academic achievement.
Indices of expectation-press and need-press were correlated with high school rank, SAT Verbal and Mathematics scores, high school grade point average on Mathematics, English Composition and Physical Aptitude Test. Lauterbach and Vielhaber concluded that neither expectancy-press nor need-press measures aid appreciably in the prediction of freshman grades. Accurate anticipation of press at West Point was a function of cognitive factors. Congruence between needs and press is associated with lesser academic achievement.

With the CCI Pervin (1968) compared perceptions of Princeton undergraduates with expectations held by accepted high school applicants. The Past Performance Questionnaire was used to measure students' expectations about their own performance at college. Expectations were accurate according to the relative distributions of press at Princeton, but inaccurate according to the amount of each press scale. A comparison of 30 scales for expected press and perceived press indicated that students expected Princeton University to be intellectual. Self-expectations measured by the Past Performance Questionnaire were associated with actual academic performance, but students generally overestimated their level of performance. Demographic, intellectual and personality variables were related to differences in expectations.

Shaw (1968) used the CCA to determine "discrepancy" between expectations and perceptions. Comparing the 16 percent most accurate with the 16 percent least accurate, Shaw observed no significant differences in grade point average after one semester or three semesters between the two groups. When comparing the entire sample, he found that a larger percentage of more accurate expectors remained
in engineering and a larger percentage of inaccurate expectors transferred to other departments or dropped out.

Using the CCI's 11 environmental factors Buckley (1971) examined the congruence or dissonance in transfer student expectations and compared them with upperclassmen perceptions. Significant relationship was found only for transfer students from the professional-managerial-socioeconomic class between compatibility of expectations with perceptions and grade point average performance.

Students entering a university anticipate more academic, intellectual, and aesthetic activities and experiences than are perceived by students at that university. Entering students simultaneously expect both a higher demand for achievement and a higher opportunity for play than enrolled students experience. They describe an anticipated environment that has more opportunities for affiliation and nurturance and less opportunities for aggression. The importance of emotional expression and self-orientation in the college is less than anticipated. Also, students put more emphasis on autonomy. Finally, entering freshmen anticipate more planfulness than they are likely to find.

The direction of the differences between expected and actual environment are generally the same as those that appear when the college environment described by underclassmen is compared with the description of upperclassmen. (Brewer, 1963; Rowe, 1964; Weiss, 1964) Lowerclassmen when compared with upperclassmen place a higher emphasis on academic and intellectual pursuits, on achievement and effort in various areas, on helpfulness to others, emotionality and exhibitionism, change and
planfulness, orderliness, and a lower emphasis on aggression. Research has not been able to determine whether these differences are due to (1) differences in the immediate environment of under- and upper-classmen, or (2) differential knowledge of the total environment in some systematic way. Upperclassmen who have been around longer may report perceptions more accurately.

Expectations and perceptions of the college environment have been measured with the CUES using similar designs. On all five scales, entering freshmen score higher than either students already at the school or than they themselves will score after being in college. (Pace, 1963, 1966a; Berdie, 1966, 1967; Fisher, 1966; Brown, 1967; Pate, 1970) When compared with the real environment, descriptions of entering freshmen are higher on:

(1) Academic achievement, concern for scholarship, and interest in knowledge and ideas.

(2) Self-understanding, perceived involvement in the world's problems and the search for personal identity and poetic meaning.

(3) Personal status and practical benefits.

(4) Friendliness, cohesion and group orientation on campus.

(5) Concern with politeness, protocol and consideration.

Differences between lowerclassmen and upperclassmen are in the same direction as differences between expectations and perceptions. Lowerclassmen place higher emphasis on all five scales measured by the CUES Instrument. (Berdie, 1966, 1967; Pate, 1970)

Feldman and Newcomb (1969) generalized the results of seven CCI studies comparing expected with actual college environment using 30
scales of the CCI. Comparisons between expected and actual environment yielded statistically different rank-order correlation coefficients ranging from .30 to .70. Students entering college are partially accurate about the relative distribution of demands and opportunities of their new environment. Some evidence indicates that these expectations are not altogether unpatterned and are more than random error. Stern (1966b) and Webb (1963) report that expectations are more similar to each other than they are to distinctive characteristics of the college. These generalized, stereotyped and idealized images of college are consistent, regardless of reality at American colleges. These expectations have been referred to as the "freshman myth" or "transfer myth." Stern (1969) compared freshmen expectations at four colleges with the norm CCI group. (Figure 3)

Many students experience culture-shock or value-shock, some more than others. Yet a certain degree of shock is not unexpected or undesired by students entering college. A number of investigations have noted that young persons, either when thinking about college during high school or before entering college, expect and want to change. (Silber, et al., 1961; Douvan and Kaye, 1962; Freedman, 1965) Pervin (1966) suggests that these unrealistic expectations have both accurate and inaccurate components. It is not unrealistic for a large percentage of students expecting to achieve high in college because past performance justifies high aspirations for most of these students. For other individuals, their expectations may be a function of their needs. Dr. George Stern pointedly considers the needs of students entering a university:
Figure 3. Freshman Expectations At Beloit College, Cazenovia College, Saint Louis University And Syracuse University In 1963
Miss Christine McGuire (University of Illinois): What happens to the deviate student in a small group who has needs other than those which seem to be supported by the institutional philosophy?

Dr. Stern: . . . Students who end up in an institution that is really antithetical to their needs, or who perceive the institution as antithetical to their needs, are kids who very often get into serious trouble. Suicides have been associated with this. Such students might very well have found a good measure of support in the environment if they had known where to go for it, or, more important, if anyone realized what they were trying to do. Instead, they feel isolated. They perceive the institution as being completely alien, as anything but meaningful to them. And they see themselves as isolates, as alienated individuals. (Stern, 1965, p. 154)
Chapter 3

PROCEDURES AND DESIGN

This chapter describes the procedures employed in the study for determining (1) the selection of the method, (2) selection and establishment of the sample, (3) sources of data, (4) development of the change score, (5) scoring of the data, and, (6) the design and methods employed in the analysis of the data.

SELECTION OF A METHOD

Since student expectations and perceptions are difficult to measure directly, an indirect method was used in this study. The student indicated on a standardized written questionnaire his acceptance or rejection of statements describing his college environment. The comparison between a student's choice and his real expectations and perceptions of the environment provides a successful approximation of the relationship.

Each student was individually administered the College Characteristics Index (CCI) with modified instructions.

SELECTION AND ESTABLISHMENT OF THE SAMPLE

The population consisted of all freshman students who had registered for 12 semester hours or more for the fall semester, 1971, at South Dakota State University, Brookings, South Dakota.

South Dakota State University is one of six four-year,
coeducational institutions under the control of the Board of Regents of South Dakota. The admission policy of South Dakota State University is guided by the land-grant philosophy of providing "... for all with the will and ability to learn." The University services primarily a midwestern geographical region. Approximately 90 percent of the students are South Dakota residents. During the Fall semester, 1971, the University had an enrollment of approximately 5,839 full-time students, with 3,521 males and 2,318 females. The new freshman class was composed of 852 males and 764 females.

Prior to registration, a 14 percent random sample, stratified according to sex, was selected from the list of incoming students as published by the Student Services office. This sample size was chosen since it was felt that it would produce a sufficient number to provide meaningful data analysis of the perceptions, expectations and changes of students after one semester of university attendance.

This sample of 230 incoming freshman students was contacted by letter (Appendix C) through their residence hall address three days prior to registration for the Fall term. The sample was asked to complete the questionnaire during registration. All freshman students who are non-residents of Brookings are required to reside in the residence halls on or next to the campus. Approximately 93 percent of the freshman students live in the residence halls.

During the two days of testing, 126 students (65 males and 61 females) completed the questionnaire. In addition, seven students' results were eliminated due to incomplete or incorrect responses on the questionnaire. Ninety-seven of the sample elected not to volunteer.
The test was readministered during the second semester. At that time, 10 of 126 students had not returned to the university. Thus 116 students were contacted to participate in the readministration of the CCI. Four of these were eliminated by the investigator when it was determined that they were transfer students living off-campus. An effort was made to sample a homogeneous population by type of residence and year of study. Only freshman students living on campus were sampled. Ten freshman students elected not to volunteer. In all, 102 students (53 males and 49 females) completed the readministered CCI.

Each student who had participated in both test administrations was placed into one of three groups according to his grade point average performance for the first semester: high performer (4.00 to 2.81), average performer (2.80 to 2.15) and low performer (2.14 to 0.00). Each grade point average (GPA) group was subdivided according to sex. Nonparticipators were eliminated since a change score could not be determined. Nonparticipators were identified as students who had not participated in the readministration of the CCI. They included: 10 non-returnees to the university, four transfers from other colleges living off-campus and 10 who did not volunteer to participate. This group included 12 male and 12 female students.

Table 1 illustrates the number of students in each group.

**SOURCES OF DATA**

**Administration of the CCI**

The CCI was administered in written form individually to 133 freshman students registering for the Fall semester, 1971. The
Table 1. Sample Groups According To Sex GPA Performance Pre-Post Test And Non-Participators

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre-Test Expectations</th>
<th>Post-Test Perceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Performers ( (m_1) )</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Average Performers ( (m_2) )</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Low Performers ( (m_3) )</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Non-Participators ( (m_4) )</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>65</td>
<td>53</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Performers ( (f_1) )</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Average Performers ( (f_2) )</td>
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<td>15</td>
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<tr>
<td>Low Performers ( (f_3) )</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Non-Participators ( (f_4) )</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61</td>
<td>49</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>126</td>
<td>102</td>
</tr>
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</table>
investigator administered the instrument in all cases. The procedure for administration was identical for each case. Each student was given a pencil, test booklet and answer sheet and was asked to have a seat and to carefully read the instructions. The investigator emphasized that the results were to be used in a study and would not become a part of the student's record. Students required approximately 40 to 60 minutes to complete the 300 item questionnaire.

The CCI instructions were modified. The modified instructions asked students to state their expectations rather than perceptions. A measure of student expectations about South Dakota State University was determined by the instrument. A sheet with modified instructions was attached to the front page of the test booklet covering completely the original CCI instructions. (Appendix B) A legend corresponding to the instruction sheet was placed at the top of each page inside the test booklet. (Appendix B) Observations by the investigator showed that no student attempted to uncover the original instructions.

The administration of the CCI was completed during the two days of registration prior to the first day of classes. Most students had been on campus three days before classes began.

**Readministration of the CCI**

The follow-up administration of the CCI was during the second semester between the dates of February 29 to March 8, 1972. The 116 students were contacted by letter to participate in the second phase of the study. (Appendix C) After the third day of readministering the instrument, each student who had not yet participated was contacted by phone by the investigator. Forty-four students were contacted in this
manner. For most of these students there appeared to be a conflict in time schedules. Arrangements were made for the students to take the questionnaire at times other than those listed in the letter mailed to each student. For 13 students, the questionnaire and answer sheet were mailed to their residence hall and were returned within four days. Readministration of the CCI was completed by March 8, 1972.

Other Sources of Data

The grade point averages were obtained from the university's registrar records. A student's GPA was used as the index of his academic performance and achievement as a college freshman for one semester. Non-participators were eliminated as a group.

Grade point averages of 102 students were ranked from 4.00 to 0.00 and divided into three groups: upper third (4.00 to 2.81), middle third (2.80 to 2.15) and lower third (2.14 to 0.00). Students were accordingly identified as high performers, average performers and low performers.

For each student who had participated in both administrations of the CCI, 11 factor change or C-scores were obtained.

DEVELOPMENT OF THE C-SCORE

Three studies have used the concept of "difference score" in studying expectations, perceptions and press of college students. Lauterbach and Vielhaber (1966) derived a D-measure in observing distance between expectations of the students and the press of the college environment as well as between needs of the student and the press of the
college environment. A D-statistic was calculated between 30 CCI scale means for the compared groups. Buckley (1969, 1971) defined a total dissonance score or total disparity score as the sum of the real CCI 30 scale score differences between expected environment and perceived environment. This was computed for each student by accumulating the actual amount he differed from the upperclass mean on each scale. Pate (1970) measured the expectations and perceptions of college students with the CUES. He measured absolute change on each scale by using t-tests for correlated means. The total number of items changed between expectation means and perception means was tallied.

**Scoring of the Data**

The absolute difference score in this study is the measure of difference or change irrespective of a key from an expectation response to perception response for each of the 300 items. Figure 4 (Appendix D) demonstrates how the C-score is computed from the answer sheet for one student on the first CCI scale.

C-scores were summed into 30 scales and 11 environmental factor scores. C-scores on 11 CCI factors were obtained for male and female high performers, average performers and low performers.

Each answer sheet contains 300 items, 10 items designated for each of 30 scales. The student circled True (T) if the item applied to his expectations or perceptions of the environment or False (F) if the item did not apply. The ten items, identified by a number across the page on the answer sheet (1, 31, 61, 91, 151, 181, 211, 241, and 271) constitute a scale which is identified by the first number in that
row. In this case, it is scale 1, Abasement—Assurance. The first number for each scale down the answer sheet (1, 2, 3, 4, etc.) corresponds to the alphabetical order of the 30 scales. (Appendix A)

**Methodological Considerations And Design**

Male and female students were treated as separate groups. Previous research has demonstrated that expectations and perceptions of a college environment differ according to sex. (Stern, 1970) The sample population was administered the CCI as soon as freshman students had arrived on campus for registration. An effort was made to complete administration of the CCI before the first day of class. Recent research has pointed out the methodological error in measuring student expectations after students have attended the first day of classes. (Feldman and Newcomb, 1969)

To measure change between expectation and perception of the university, one semester was selected as the intervening time period for the university environment to differentially alter the expectations of the sample population. Stern (1970) observed that within a week after the first day of class, freshman expectations begin to change.

A pre-post test design was selected to observe the intervening effect of the college environment. A pre-test is referred to as the measure of expectations. A post-test is referred to as the measure of perceptions.

A posteriori method of grouping students was selected to determine GPA and sex effect on the derived difference scores. The a priori method of grouping student expectations and observing their
antecedent changes on GPA was determined to be less effective by the investigator due to the complexity of dealing with 11 independent measures. Applying the criteria of GPA and sex after the data on expectations and perceptions was gathered facilitated the hypothesis testing.

GPA criterion was divided into three parts to provide a meaningful measure of differential treatment effect and to include the entire sample of the population that had participated in both administrations of the instrument.

The research design analyzed treatment of GPA and sex on the C-scores. Pre- and Post-test administration presented the design for statistically deriving the C-scores.

To avoid making a Type II methodological error of accepting the null hypothesis when the alternative is true, a .10 level of confidence was selected as the basis for rejecting the null hypothesis. The .10 level of confidence is indicated for the C-score hypotheses. Kerlinger (1965) demonstrated that a stringent level of confidence may discard "really" significant results in exploratory research.

Analysis of the Data

The basis for rejecting a hypothesis was the number of factors found significantly different according to the criterion established by the two hypotheses. The 11 factors can be divided into two large groups: 1 through 6 intellectual factors and 6 through 11 non-intellectual factors. Factor 6 is defined as falling within both groups. If three or more factors in one of two groups were found to be significantly different
the hypothesis would be rejected. If five or more of 11 factors were found to be significantly different, the hypothesis would be rejected.

The analysis of variance (ANOVA) statistical procedure using the least-squares technique to account for unequal students per cell was applied to test the null hypotheses listed in Chapter 1. ANOVA with a completely randomized factorial design (CRF 23) analyzed C-scores for two sexes and three groups by GPA performance. The procedures and formulas for the preceding design and statistics are detailed in Kirk (1968).
Chapter 4

FINDINGS

Included in this chapter is a report of the research findings and an analysis of freshman C-scores and their relationship to GPA and sex of the student.

HYPOTHESIS 1

There are no significant differences in the freshman change or C-score on the basis of the sex of the student.

ANOVA CRF 23 design (Tables 2 through 12) and mean responses (Table 13) showed significant differences on nine of 11 factors at the .10 level of confidence. Table 14 illustrates the C-score means and standard deviations for the freshman sample. Table 15 and Figure 5 illustrate the male and female significant differences, irrespective of GPA grouping, on nine of 11 factors. Transforming the number of items changed for each factor into percentage of change, comparisons between males and females were made. Table 16 illustrates this by presenting male, female and overall percentage C-score changes. Irrespective of GPA grouping, males experienced a greater change than females between expectations and perceptions on nine of 11 factors. Similarly, males experienced a greater percentage of change than females on nine of 11 factors.

Therefore, the hypothesis was rejected.
Table 2. ANOVA CRF 23 Of Factor 1 Aspiration Level

<table>
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<tr>
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<td>27.48</td>
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<td>23.72</td>
<td>1.61</td>
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<td>50.45</td>
<td>2</td>
<td>25.22</td>
<td>1.72</td>
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<td>5 Total</td>
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***p < .01  
**p < .05  
*p < .10

Table 3. ANOVA CRF 23 Of Factor 2 Intellectual Climate

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<td>1</td>
<td>168.89</td>
<td>7.34***</td>
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<td>4 Within Cell</td>
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<td>5 Total</td>
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***p < .01  
**p < .05  
*p < .10
Table 4. ANOVA CRF 23 Of Factor 3 Student Dignity

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<td>6.33</td>
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<tr>
<td>3 AC</td>
<td>2.31</td>
<td>2</td>
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<td>.08</td>
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<td>4 Within Cell</td>
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***p < .01  
**p < .05  
*p < .10

Table 5. ANOVA CRF 23 Of Factor 4 Academic Climate

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<td>1 A (Sex)</td>
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<td>7.39</td>
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<td>.48</td>
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<td>3 AC</td>
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<td>9.16</td>
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<td>732.72</td>
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<td>5 Total</td>
<td>782.79</td>
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***p < .01  
**p < .05  
*p < .10
Table 6. ANOVA CRF 23 Of Factor 5 Academic Achievement

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<tr>
<td>1 A (Sex)</td>
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<td>1</td>
<td>135.66</td>
<td>6.21**</td>
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<td>2 C (GPA)</td>
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<td>14.03</td>
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<td>4 Within Cell</td>
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***p < .01
**p < .05
*p < .10

Table 7. ANOVA CRF 23 Of Factor 6 Self Expression

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<td>8.68</td>
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<td>16.93</td>
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<td>4 Within Cell</td>
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<td>5 Total</td>
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***p < .01
**p < .05
*p < .10
### Table 8. ANOVA CRF 23 Of Factor 7 Group Life

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<td>2 C (GPA)</td>
<td>7.73</td>
<td>2</td>
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<td>3 AC</td>
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<td>13.12</td>
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<td>5 Total</td>
<td>1327.67</td>
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***p < .01
**p < .05
*p < .10

### Table 9. ANOVA CRF 23 Of Factor 8 Academic Organization

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<td>2523.83</td>
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Table 10. ANOVA CRF 23 Of Factor 9 Social Form

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***p < .01
**p < .05
*p < .10

Table 11. ANOVA CRF 23 Of Factor 10 Play-Work

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<td>1643.75</td>
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***p < .01
**p < .05
*p < .10
Table 12. ANOVA CRF 23 Of Factor 11 Vocational Climate

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<td>5.85**</td>
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<td>29.95</td>
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<td>3.67</td>
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***p < .01  
**p < .05  
*p < .10
Table 13. CRF 23 Generated Means For 11 Factor Change Scores

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<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
<td>High</td>
<td>Average</td>
<td>Low</td>
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<tr>
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### Table 15. C-Score Means For Male And Female Groups On 11 Factors

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<td>11 Vocational Climate</td>
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</table>

**Significant Difference Between Sex**

***p < .01  
**p < .05  
*p < .10
Table 16. Percent Of Items Changed On Each Of 11 Factors For Overall Male And Female Groups

<table>
<thead>
<tr>
<th>Factor</th>
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<th>Female</th>
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<td>34.2*</td>
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</table>

Significant Difference Between Sex

***p < .01  
**p < .05  
*p < .10
Figure 5. C-Score Means For Males And Females On 11 Factors
HYPOTHESIS 2

There are no significant differences in the freshman change or C-score on the basis of GPA grouping.

ANOVA CRF 23 design (Tables 2 through 12) showed no significant differences on the basis of GPA grouping for any of the 11 factors.

The hypothesis was not rejected.
Chapter 5

DISCUSSION

Concept of C-Score

The results of this study provided support for the theoretical and practical formulations underlying the concept of C-score. The conceptual basis of C-score as a measure of change in a pre-post test design has been supported. Significant changes between sexes can be more easily observed and more practically discussed when terms such as distance, degree or amount of change are used. The impact or effect of an environmental change such as changes in residence hall arrangements, construction of a new library, implementation of a tutorial program, etc., can be assessed directly by observing the amount of change irrespective of a keyed instrument. A more accurate before and after measure is derived.

There appear to be two alternatives in measuring change. The investigator or administrator can observe change using the keyed instrument responses or tallying absolute item-per-item change. If a value system of a college corresponds to the keyed "correct" responses of an assessment instrument, a keyed response from the student population is the natural alternative. This approach also facilitates inter-institution comparisons. However, if the absolute degree, amount, or extent of change is to be assessed irrespective of a correct or incorrect response, the C-score concept provides such an analysis.
Discussion of Results Using C-score

The C-score revealed no significant differences between GPA groups and between male and/or female GPA groups. GPA criterion was not related to C-score mean responses. The results of this study indicate that absolute changes between expectations and perceptions of a university environment are not related to GPA performance.

The C-score revealed considerable changes between freshman expectations and later perceptions of the university environment according to sex of the student. In comparing male and female expectation-perception change, males changed more than females. Table 15 and Figure 5 demonstrate that males, irrespective of GPA grouping, changed more than females for 11 factors. Freshman expectations changed about 30 percent.

A considerable amount of research has demonstrated differences between freshman male and female values, attitudes, goals and aspirations. (Feldman and Newcomb, 1970a) There appears to be little research to either support or refute implications behind expectation-perception differential change according to sex of student. Further study is necessary before any conclusions can be drawn.

Freshman Myths

Considerable evidence demonstrated that freshman students entering South Dakota State University have illusory, mythical or unrealistic expectations about their college environment. Incoming students are partially accurate about the relative distribution of the demands and opportunities within the university, but are inaccurate about
the extent or amount of these experiences. The changes between expectations and perceptions are similar across 11 factors.

Once a student becomes a part of a college community his expectations are put to a test. Students will find their expectations inaccurate. Now reality tests their ability, motivation and luck. It has been suggested that colleges select students more effectively than students select colleges. To a great degree, the students’ criteria have been demonstrated to be questionable. The university’s criteria are usually objective facts. Apparently there needs to be more interchanging and communication between the two. Drop-out rates, expressed dissatisfaction, protest movements, under-achievement, etc., suggest this type of relationship between student and college.

Freshman student expectations about South Dakota State University are based on both knowledge and hope, with perhaps a tinge of fantasy. The unrealistic aspect of student expectations is perhaps their failure to account adequately for the shift in the distribution of rewards and talents in the new environment. While students apparently "know" they are entering a more competitive environment, educationally and socially, this is not taken into account completely enough. Students entering college are usually higher achieving and higher performing students from their high schools.

It also may be that what freshman students describe their university to be, then, is what they expect the university to do for them. The expectations may not be so much what students desire in a college as what they believe is supposed to be going on in college.
IMPLICATIONS

The change from expectations to perceptions has concerned many social rehabilitative agencies. The culture shock or value shock experienced by incoming students may be a psychologically difficult adjustment to make. Some students are shocked more than others. The particular background and personality of the student and his ability to cope with the unexpected college environment may or may not be proportional to the extent of that shock. Yet, a certain degree of shock is not unexpected or undesired both by the student and the university.

If the environment of a college merely duplicates the home, the high school and the community from which the students come, little change during the college years might be expected except for the "maturational" development that would occur whether or not one went to college. The basic question then becomes this: How much discontinuity or incongruence is the college environment willing to bring to bear upon the student population? Does the college administrator and faculty member know how much change is desired, what the objective is and what the student expectations and limits are? South Dakota State University incoming freshman students expected more intellectual and nonintellectual experiences. Would freshman students have applied to South Dakota State University if their expectations were more realistic?

A very interesting corollary to this was observed by Stern (1969). The only group found on campus that shares the freshman myth is the administration. "Evidently both read the same literature." (Stern, 1969, p. 176) College catalogues correspond poorly with CCI
profiles obtained from upperclassmen but correspond very well with profiles based on freshman expectations. The new student arrives with great expectations reinforced by everyone he meets initially save the curious, general upperclassman or faculty member whom he will not likely know soon enough.

RECOMMENDATIONS

The delineations of this study together with the findings of the research suggest several possible areas or avenues of further investigation.

1. Experimental manipulation of the environment can be assessed more accurately in a before-after (pre-post) design using two kinds of measure jointly: a keyed instrument with value implications based on norms or theoretical constructs, and an absolute difference comparison using change or C-scores.

2. Considerable research and generated practical implications can be derived by comparing expectations and/or perceptions and absolute changes by holding other variables constant, such as sex, HSGPA, HSR, ACT scores, years of schooling desired and socio-economic level.

3. Before assessment and practical implementive changes are made from evaluating comparisons between freshman responses and norm CCI group or expectations of other colleges, it is suggested that the CCI be self-administered to demonstrate clearly one's own expectations and perceptions. Thus the criteria for any change in the environment will be the same for student and change agent.
4. The results provide implications for high school counselors and college admissions personnel. These implications include the possibility that students' expectations are unrealistic and will change about 30 percent. Also, male students' expectations will change more than females. Closer observation of this phenomena seems imperative since differential changes between sexes have not been fully researched. More so, what responsibility do counselors have in disseminating "accurate" information about colleges to students who have "inaccurate" expectations?

5. Considerable time and effort should be utilized determining whether or not changes in expectations are crucial to the development of students as determined by university goals. Is the amount of change and direction of change from freshman expectations to perceptions consistent with university objectives directly stated and indirectly inferred?

6. To determine the congruence between students' accomplishments and university objectives, students' expectations rather than perceptions should be considered first. The university does not establish programs in vacuo. Yet to determine new developments according to present functioning of the student body defeats the purpose since students may have expected something else. To compare perceptions and performance of students with objectives of the university leaves out student expectations and satisfactions. Student satisfaction with fulfilled expectations may increase motivation to achieve university objectives. Initial expectations describe more accurately what students want and desire from the university. Defining expectations of the student
enhances defining his performance and objectives of the university.

7. Administration and faculty perception of the college environment determine to a great extent their role and function in the development and education of students. What are those perceptions, irrespective of vague feelings, biased catalogues and unreliable university/student publications? More importantly, what are the administration's and faculty expectations of incoming students? Possibly the expectations of incoming students coincide with the expectations of administration and not with the faculty. Even more possible, perceptions of the college environment do not coincide with perceptions of faculty or perceptions of administration. Matching seems more conducive for development and growth in the university.

8. Different expectations and perceptions exist for different levels or groups within the university community. Considerable interaction is dependent upon these expectations and perceptions. Possible combinations to observe are: student with faculty, student with administration, freshman, sophomores, juniors and seniors, undergraduates with graduates, part-time students with full-time students, graduates with drop-outs, and Engineering College with Liberal Arts College.

9. Students who attend college for more semesters perceive the college environment differently each semester. The direction of changes in perception between underclassmen and upperclassmen is the same as between incoming freshmen expectations and their later perceptions. It can be expected that the freshmen perception profile of South Dakota
State University is different than upperclassmen perception profile. A more definitive assessment of the undergraduate population is needed. One can only hypothesize what upperclassmen perceive. But if South Dakota State University is like most other universities, upperclassmen perceive less of each factor than freshmen perceive.
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There are 300 statements in this booklet. They are statements about college life. They refer to the curriculum, to college teaching and classroom activities, to rules and regulations and policies, to student organizations and activities and interests, to features of the campus, etc. The statements may or may not be characteristic of your college, because colleges differ from one another in many ways. You are to decide which statements are characteristic of your college and which are not. Your answers should tell us what you believe the college is like rather than what you might personally prefer. You won't know the answer to many of these statements, because there may not be any really definite information on which to base your answer. Your response will simply mean that in your opinion the statement is probably true or probably false about your college. Do not omit any item.

DIRECTIONS

On the special answer sheet print your name, and the other information requested. Then, as you read each statement in the booklet, blacken space

T—when you think the statement is generally TRUE or characteristic of the college, is something which occurs or might occur, is the way people tend to feel or act.

F—when you think the statement is generally FALSE or not characteristic of the college, is something which is not likely to occur, is not the way people typically feel or act.

DIRECTIONS FOR USING NCS ANSWER SHEET

The rows of response circles are numbered to correspond to the items in the Test Booklet. Each question may be answered either O or *. In marking your answers on the Answer Sheet, make sure that the number of the Statement is the same as the number on the Answer Sheet. Be sure to answer either O or * for every Statement.

* Be sure to use a 2B or softer writing pencil.
* Do Not Use Ball Point or Ink.
* Keep your Answer Sheet Clean.
* Do not make stray marks.
* Erase errors completely.
* Fill the circle completely.

Copyright 1956 by George G. Stern and C. Robert Pace
### Legend: T — True. Generally true or characteristic of the college, is something which occurs or might occur, is the way people tend to feel or act.

F — False. Generally false or not characteristic of the college, is something which is not likely to occur, is not the way people typically feel or act.

1. Students are encouraged to critique administrative policies and teaching practices.  
2. The competition for grades is intense.  
3. In many courses grade lists are publicly posted.  
4. There are no fraternities or sororities.  
5. Students are conscientious about taking good care of school property.  
6. The students here represent a great variety in nationality, religion and social status.  
7. Most courses are very well organized and progress systematically from week to week.  
8. Professors often try to probe arguments in class, the livelier the better.  
9. Students address faculty members as "professor" or "doctor."  
10. There is a recognized group of student leaders on this campus.  
11. Student pep rallies, parades, dances, carnivals or demonstrations occur very rarely.  
12. Students here learn that they are not only expected to develop ideas but also to express them in action.  
13. Discussions get quite heated, with a lot of display of feeling.  
14. There is a lot of interest here in student theatrical groups.  
15. Many famous people are brought to the campus for lectures, concerts, student discussions, etc.  
16. There is an extensive program of intramural sports and informal athletic activities.  
17. Many of the social science professors are actively engaged in research.  
18. In most classes there is very little joking and laughing.  
19. Receptions, teas, or formal dances are seldom given here.  
20. Many upperclassmen play an active role in helping new students adjust to campus life.  
21. No one needs to be afraid of expressing extreme or unpopular viewpoints in this school.  
22. In many classes students have an assigned seat.  
23. Students really get excited at an athletic contest.  
24. It's important socially here to be in the right club or group.  
25. Books dealing with psychological problems or personal values are widely read and discussed.

26. The library is exceptionally well equipped with journals, periodicals, and books in the natural sciences.  
27. On nice days many classes meet outdoors on the lawn.  
28. There is lots of informal dating during the week — at the library, snack bar, movies, etc.  
29. Students often help one another with their lessons.  
30. There is a lot of emphasis on preparing for graduate work.  
31. Resident students must get written permission to be away from the campus overnight.  
32. It is fairly easy to pass most courses without working very hard.  
33. Student organizations are closely organized to guard against mistakes.  
34. There is a lot of group spirit.  
35. Most people here seem to be especially considerate of others.  
36. Courses, examinations, and readings are frequently revised.  
37. Instructors clearly explain the goals and purpose of their courses.  
38. When students do not like an administrative decision, they really work to get it changed.  
39. Many students try to pattern themselves after people they admire.  
40. Student elections generate a lot of intense campaigning and strong feeling.  
41. Students and faculty are proud of their rough-and-tumble and their resistance to pleasantries for special causes.  
42. Most students get extremely tense during exam periods.  
43. Students put a lot of energy into everything they do — in class and out.  
44. When students run a project or put on a show everybody knows about it.  
45. Students spend a lot of time planning their courses.  
46. Initiations and class rivalries sometimes get a little rough.  
47. The school offers many opportunities for students to understand and criticize important works in art, music, and drama.  
48. New fads and phrases are continually springing up among the students.  
49. Students take a great deal of pride in their personal appearance.  
50. There are courses which involve field trips to slum areas, welfare agencies, or slums in contact with underprivileged people.
51. The values most stressed here are open-mindedness and objectivity.
52. Students must have a written excuse for absence from class.
53. The big college events draw a lot of student enthusiasm and support.
54. There are psychology courses which deal in a practical way with personal adjustment and human relations.
55. There would be a dynamic audience for a lecture by an outstanding philosopher or theologian.
56. When students get together they seldom talk about absence.
57. The college has invested very little in drama and dance.
58. Student gathering places are typically active and noisy.
59. There is a student loan fund which is very helpful for minor emergencies.
60. The school is outstanding for the emphasis and support it gives to pure scholarship and basic research.
61. Students are seldom kept waiting when they have appointments with faculty members.
62. Most courses require intensive study and preparation out of class.
63. Students are expected to play bridge, golf, bowls together, etc., regardless of individual skill.
64. There are many opportunities for students to get together in extracurricular activities.
65. Most students show a good deal of caution and self-control in their behavior.
66. There are many students from widely different geographic regions.
67. A lot of students who get low passing grades in mid-term really make an effort to earn a higher grade by the end of the term.
68. People here really play to win, not just for the fun of the game.
69. Religious worship here stresses service to God and obedience to His laws.
70. Students are expected to report any violation of rules and regulations.
71. Many students here develop a strong sense of responsibility about their role in contemporary social and political life.
72. The way people feel around here is always pretty evident.
73. Few students here would ever work or play to the limit of exhaustion.
74. Students have many opportunities to develop skill in organizing and directing the work of others.
75. Most students would regard mountain-climbing, rugged camping trips, or driving a car all night as pretty grueling.
76. Fire drills are held in student dormitories and residences.
77. A lecture by an outstanding literary critic would be poorly attended.
78. Many informal student activities are unplanned and spontaneous.
79. Peace and sophistication are highly respected by both students and faculty.
80. Most students here would not want pets (dogs, cats, etc.) even if they were allowed to have them.
81. Most faculty members are liberal in interpreting regulations and treat violations with understanding and tolerance.
82. Student papers and reports must not be neat.
83. There are lots of dances, parties, and social activities.
84. Many courses stress the speculative or abstract rather than the concrete and tangible.
85. There are many facilities and opportunities for individual creative activity.
86. A lecture by an outstanding scientist would be poorly attended.
87. Student rooms are more likely to be decorated with pennants and posters than with paintings, carvings, mobiles, fabrics, etc.
88. Most students here really enjoy dancing.
89. The person who is always trying to "help out" is likely to be regarded as a nuisance.
90. Most students have very little interest in round tables, panel meetings, or other formal discussions.
91. If a student wants help, he usually has to answer a lot of embarrassing questions.
92. Personality, pull, and bluff get students through many courses.
93. In many courses there are projects or assignments which call for group work.
94. The professors seem to have little time for conversation with students.
95. The faculty and administration are often joked about or criticized in student conversations.
96. Everyone here has pretty much the same attitudes, opinions, and beliefs.
97. Activities in most student organizations are carefully and clearly planned.
98. Channels for expressing students' complaints are readily accessible.
99. Students almost always want to be called on before speaking in class.
100. Personal rivalries are fairly common.
101. Boy-girl relationships in this atmosphere tend to be practical and unemotional, rarely becoming intensely emotional or romantic.
102. There is a lot of excitement and restlessness just before holidays.
103. There are so many things to do here that students are busy all the time.
104. Most students here would not like to dress up for a fancy ball or a masquerade.
105. Most students are more concerned with the present than the future.
106. Many students drive sports cars.
107. Few students are planning post-graduate work in the social sciences.
108. Dormitory rules, water fights and other student pranks would be unthinkable here.
109. Most students here enjoy such activities as dancing, skating, diving, gymnastics.
110. Students often set errands or do other personal services for the faculty.
111. Many students have special good luck charms and practices.
112. Campus architecture and landscaping stress symmetry and order.
113. There is very little studying here over the week-ends.
114. Students are more interested in specialization than in general liberal education.
115. Modern art and music get little attention here.
116. Few students are planning careers in science.
117. This is mainly a meat and potatoes community, with little interest in garnets or anything unusual.
118. Students spend a lot of time talking about their boy or girl friends.
119. Students here are encouraged to be independent and individualistic.
120. A lot of students like chess, puzzles, double-crosses, and other abstract games.
121. For a period of time freshmen have to take orders from upperclassmen.
122. Students who work hard for high grades are likely to be regarded as odd.
123. In most classes every student can expect to be called on to recite.
124. The school helps everyone get acquainted.
125. Many students seem to expect other people to adapt to them rather than trying to adapt themselves to others.
126. Many students travel or look for jobs in different parts of the country during the summer.
127. Assignments are usually clear and specific, making it easy for students to plan their studies effectively.
128. People around here seem to thrive on difficulty - the harder they work, the harder they work.
129. In talking with students, faculty members often refer to their colleagues by their first names.
130. The important people at this school expect others to show proper respect for them.
131. There are practically no student organizations actively involved in campus or community affairs.
132. Most students respond to ideas and events in a pretty cool and detached way.
133. There seems to be a lot of interest here in health drugs, vitamins, anti-histamines, etc.
134. There are a good many colorful and controversial figures on the faculty.
135. Education here tends to make students more practical and realistic.
136. Students are frequently reminded to take preventive measures against illness.
137. A student who insists on analyzing and clarifying art and music is likely to be regarded as a little odd.
138. Students often start projects without trying to decide in advance how they will develop or where they may end.
139. Students who are not properly trained are likely to have little called to their attention.
140. The college regards training people for service to the community as one of its major responsibilities.
141. A well reasoned report can rate an A grade here even though its viewpoint is opposed to the professor's.
142. Instructors usually take attendance in class.
143. New faces and gags get around the campus in a hurry.
144. Family social and financial status may not be talked about but everyone knows who's who.
145. The student newspaper rarely carries articles intended to stimulate discussion of philosophical or ethical matters.
146. Course offerings and faculty in the natural sciences are outstanding.
147. There is a lot of interest here in poetry, music, painting, sculpture, architecture, etc.
148. Bermuda shorts, pin-up pictures, etc., are common on this campus.
149. There is a high degree of respect for community and institutional freedom.
150. "that Mau-Mau" seems to be more important than "subject matter" at this school.
Legend:  T — True. Generally true or characteristic of the college, is something which occurs or might occur, is the way people tend to feel or act.

F — False. Generally false or not characteristic of the college, is something which is not likely to occur, is not the way people typically feel or act.

151. No case is expected to suffer in silence if some regulation happens to create a personal hardship.
152. Examinations here provide a genuine measure of a student's achievement and understanding.
153. Students' mid-term and final grades are reported to parents.
154. Students almost never see the professors except in class.
155. Students occasionally plot some sort of escapade or rebellion.
156. Most students dress and act pretty much alike.
157. Faculty advisors or counselors are pretty practical and efficient in the way they dispatch their business.
158. If a student fails a course he can usually substitute another one for it rather than take it over.
159. A lot of students here will do something even when they know they will be criticized for it.
160. There are no favorites at this school — everyone gets treated alike.
161. Students are actively concerned about national and international affairs.
162. An open display of emotion would embarrass most professors.
163. Students get so absorbed in various activities that they often lose all sense of time or personal comfort.
164. It is easy to obtain student speakers for clubs or meetings.
165. There is little sympathy here for ambitious daydreams about the future.
166. Drinking and late parties are generally tolerated, despite regulations.
167. When students get together they seldom talk about trends in art, music or the theater.
168. There seems to be a jumble of papers and books in most faculty offices.
169. There are no names in any of the public rooms or halls.
170. There is a great deal of borrowing and sharing among the students.
171. Some of the professors react to questions in class as if the students were criticizing them personally.
172. The campus and buildings always look a little unkempt.
173. Everyone has a lot of fun at this school.
174. Many students enjoy working with their hands and are pretty efficient about making or repairing things.
175. Special museums or collections are important possessions of the college.
176. Laboratory facilities in the natural sciences are excellent.
177. The library has paintings and phonograph records which circulate widely among the students.
178. There are several popular spots where a crowd of boys and girls can always be found.
179. Most of the faculty are not interested in students' personal problems.
180. Very few students here prefer to talk about poetry, philosophy, or mathematics as compared with motion pictures, politics, or inventions.
181. Faculty members are impatient with students who interrupt their work.
182. Students set high standards of achievement for themselves.
183. Students quickly learn what is done and not done on this campus.
184. Faculty members rarely or never call students by their first names.
185. When students dislike a faculty member they make it evident to him.
186. There are many foreign students on the campus.
187. In most classes, the presentation of material is well planned and illustrated.
188. Everyone knows the "vamp" courses to take and the torch others to avoid.
189. Professors seem to enjoy breaking down myths and illusions about famous people.
190. Anyone who knows the right people in the faculty or administration can get a better break here.
191. Students are encouraged to take an active part in social reforms or political programs.
192. Graduation is a pretty matter-of-fact, unemotional event.
193. Faculty members put a lot of energy and enthusiasm into their teaching.
194. There is a lot of fanfare and pageantry in many of the college events.
195. Nearly all students expect to achieve future fame or wealth.
196. All undergraduates must live in university approved housing.
197. Humanities courses are often elected by students majoring in other areas.
198. Students who tend to say no to the first thing that occurs to them are likely to have a hard time here.
199. There are definite times each week when dining is made a gracious social event.
200. A good deal of enthusiasm and support is aroused by fund drives for Campus Chest, CARE, Red Cross, refugee aid, etc.
201. There always seem to be a lot of little quarrels going on.
202. Most student rooms are pretty messy.
203. It's easy to get a group together for card games, guessing games, etc.
204. The academic atmosphere is practical, emphasizing efficiency and usefulness.
205. Tutorial or honors programs are available for qualified students.
206. A student who spends most of his time in a science laboratory is likely to be regarded as a little odd.
207. There are paintings or statues of noted men on the campus.
208. Students frequently go away for football games, skiing weekends, etc.
209. Students commonly share their problems.
210. Most of the professors are dedicated scholars in their fields.
211. The school administration has little tolerance for student complaints and protests.
212. Standards set by the professors are not particularly hard to achieve.
213. Frequent tests are given in most courses.
214. Students spend a lot of time together at the snack bars, taverns, and in one another's rooms.
215. Students are sometimes noisy and inattentive at concerts or lectures.
216. The history and traditions of the college are strongly emphasized.
217. Most students follow a systematic schedule for studying and recreation.
218. No one gets pushed around at this school without fighting back.
219. Faculty members and administrators see students only during scheduled office hours or by appointment.
220. Students exert considerable pressure on one another to live up to the expected codes of conduct.
221. National elections generate a lot of intense campaigning and strong feeling on the campus.
222. Students here can be wildly happy one minute and hopelessly depressed the next.
223. Many lectures are delivered in a monotone with little animation or emphasis.
224. Public debates are held frequently.
225. The faculty encourage students to think about exciting and unusual careers.
226. Students rarely get drunk and disorderly.
227. Course assignments and faculty in the social sciences are outstanding.
228. Students often rally and demonstrate errors frequently.
229. Proper social forms and manners are important here.
230. Many church and social organizations are especially interested in charity and community service.
231. The faculty try to be modest about students' merit and often make the worst interpretations of even trivial incidents.
232. Classrooms are kept clean and tidy.
233. There isn't much to do here except go to classes and study.
234. The college offers many really practical courses such as typing, report writing, etc.
235. Long, serious intellectual discussions are common among the students.
236. Many of the natural science professors are actively engaged in research.
237. In papers and reports, vivid and novel expressions are usually criticized.
238. Some of the most popular students have a knack for making witty, savile remarks with a slightly sly tone.
239. The professors put all of their heart into their work.
240. In class discussions, papers, and exams, the main emphasis is on breadth of understanding, perspective, and critical judgment.
241. Students don't argue with the professor; they just admit they are wrong.
242. Learning what is in the text book is enough to pass most courses.
243. The professors regularly check up on the students to make sure that assignments are being carried out properly and on time.
244. Students frequently study or prepare for examinations together.
245. Students pay little attention to rules and regulations.
246. Old grudges are always pleased to discover that few things have changed.
247. It is hard to prepare for examinations because students seldom know what will be expected of them.
248. The campus religious program tends to emphasize the importance of active participation in religious phases, rather than the acceptance of tradition.
249. Student publications never bring down disreputable people or institutions.
250. People here are always trying to win an argument.
Legend: T — True. Generally true or characteristic of the college, is something which occurs or might occur, is the way people tend to feel or act.

F — False. Generally false or not characteristic of the college, is something which is not likely to occur, is not the way people typically feel or act.

251. There are a number of prominent faculty members who play a significant role in national or local politics.

252. Students tend to hide their deeper feelings from each other.

253. Class discussions are typically vigorous and intense.

254. The college tries to avoid advertising and publicity.

255. The future goals for most students emphasize job security, family happiness, and good citizenship.

256. Few students bother with rubrics, hats, or other special protection against the weather.

257. The library is exceptionally well equipped with journals, periodicals, and books in the social sciences.

258. There are frequent informal social gatherings.

259. Social activities are more popular here than jazz bands or novelty groups.

260. Chapel services on or near the campus are well attended.

261. The school has an excellent reputation for academic brawls.

262. Campus buildings are clearly marked by signs and directories.

263. Students are very serious and purposeful about their work.

264. Education for leadership is strongly emphasized.

265. Students who are concerned with developing their own personal and private system of values are likely to be regarded as odd.

266. Introductory science or math courses are often selected by students majoring in other areas.

267. To most students here art is something to be studied rather than felt.

268. This college’s reputation for marriages is as good as its reputation for education.

269. Students are expected to work out the details of their own program in their own way.

270. Most of the professors are very thorough teachers and really probe into the fundamentals of their subjects.

271. There is a lot of apple-polishing around here.

272. Mathematics is a real intellectual challenge.

273. Students have little or no personal privacy.

274. The professors really talk with the students, not at them.

275. Students ask permission before deviating from common practices or practices.

276. Most students look for variety and novelty in number jobs.

277. It is easy to take chair notes in most courses.

278. It is very difficult to get a group decision here without a lot of argument.

279. A controversial speaker always stirs up a lot of student discussion.

280. The student leaders here have lots of special privileges.

281. The expression of strong personal belief or conviction is pretty rare around here.

282. Very few things here arouse much excitement or feeling.

283. The professors really push the students’ capacities to the limit.

284. Student parties are colorful and lively.

285. Quite a few faculty members have had varied and unusual careers.

286. Rough games and contact sports are an important part of intramural athletics.

287. In many respects the broad social and historical setting of the material is not discussed.

288. Students frequently do things on the spur of the moment.

289. Students think about dressing appropriately and interestingly for different occasions — classes, social events, sports, and other affairs.

290. This school has a reputation for being very friendly.

291. Many faculty members seem moody and unpredictable.

292. Classes meet only at their regularly scheduled times and places.

293. Every year there are carnivals, parades, and other festive events on the campus.

294. Most students are interested in careers in business, engineering, management, and other practical affairs.

295. There is considerable interest in the analysis of value systems, and the relativities of societies and ethics.

296. There is a lot of interest in the philosophy and methods of science.

297. Concerts and art exhibits always draw big crowds of students.

298. Nearly everyone here has a date for the weekend.

299. Counseling and guidance services are really personal, patient, and extensive.

300. Careful reasoning and clear logic are valued most highly in grading student papers, reports, or discussions.
There are 300 statements in this booklet. They are statements
about college life. They refer to the curriculum, to college teaching
and classroom activities, to rules and regulations and policies, to
student organizations and activities and interests, to features of the
campus, etc.

You are to decide which statements are like your expectations
and which are not like your expectations about the first semester this
year at South Dakota State University.

Your answers should tell us what you expect South Dakota State
University to be like. Your responses will simply mean that in your
opinion the statement is probably true or false and it is not what you expect during
your first semester this year.

DIRECTIONS
On the special answer sheet inserted, print your name at the
top left-hand corner, last name first. Continue across the
page and fill in the appropriate circle (male or female).

Then, as you read each statement in the booklet, BLACKEN the
space:
T (true) when you think the statement is true of what you
expect South Dakota State University to be like
this semester.

F (false) when you think the statement is false and it is not
what you expect this semester.

Directions for using NCS answer sheet:
The rows of response circles are numbered to correspond to the items
in the Test Booklet. Each question may be answered either (T) or (F).

In marking your answers on the Answer Sheet, make sure that the number
of the Statement is the same as the number on the Answer Sheet. Be sure
to answer (T) or (F) for every Statement.

* Be sure to use the pencil provided.
* Do not use Ball Point or Ink.
* Keep your answer sheet clean.
* Do not make any stray marks.
* Erase errors completely.
* Fill the circle completely.
Legend:

- **T** (true) when you think the statement is true of what you expect South Dakota State University to be like this semester.

- **F** (false) when you think the statement is false and it is not what you expect this semester.
September 13, 1971

Dear Student,

You have been randomly selected along with many other students to participate in a study here at South Dakota State University.

This study is being conducted by a graduate student with the cooperation and assistance of the Counseling and Guidance Department, Student Services Office and your own dormitory administrative personnel.

We need your cooperation in coming to the place designated below. Your participation of about an hour will involve the completion of a questionnaire.

TIME—SEPTEMBER 14, TUESDAY
9:00 A.M. till 5:00 P.M. ALL MORNING AND AFTERNOON
6:00 P.M. till 8:00 P.M. EVENING

SEPTEMBER 15, WEDNESDAY
8:00 A.M. till 5:00 P.M. ALL MORNING AND AFTERNOON

PLACE—SOLBERG HALL, ACROSS THE STREET FROM THE LIBRARY
ROOM 202, SECOND FLOOR

You may come any time within the hours stated above. We start when you enter the room.

We appreciate your attendance and assistance.

Thank you,

Zdzislaw Harry Piotrowski
Dear Student,

Last Fall, before the first semester began, you completed a questionnaire and a biographical form as a part of a study designed to find out what expectations you as a Freshman had about South Dakota State University.

You and a limited number of other students are now being asked to participate in the next phase of the study. This will require approximately an hour of your time. Your participation is of vital importance to the success of the project, since incomplete participation will serve to invalidate the results of the study.

In order to participate you are asked to attend one of the following time intervals as your schedule may permit. You may attend anytime between the following listed hours:

1. Tuesday, February 29. Solberg Hall 201B 8:30 A.M. till 11:30 A.M.
   1:30 P.M. till 4:30 P.M.

2. Wednesday, March 1. Solberg Hall 201B 8:30 A.M. till 11:30 A.M.
   1:30 P.M. till 4:30 P.M.

3. Thursday, March 2. Solberg Hall 201B 8:30 A.M. till 11:30 A.M.
   1:30 P.M. till 4:30 P.M.

4. Friday, March 3. Solberg Hall 201B 8:30 A.M. till 11:30 A.M.

Please make a note as to which session you plan to attend. If you would be unable to attend any of these sessions because of schedule conflicts or for other reasons, please notify us in the Guidance and Education Department (Solberg Hall 204, phone number 688-6519), so that a more convenient time can be arranged.

Your cooperation is essential, and will be greatly appreciated.

Sincerely yours,

Zdzislaw Harry Piotrowski
Graduate Student
APPENDIX D
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Expectation response score 5

Perception response score 7

Change or C-score 6

Figure 4. Example Of Computation Of C-Score