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The ways in which differences between expected grades and those actually received affect a student's academic expectations, actual performance, attribution of success or failure, and self-involvement were measured. Using the assumption that an individual is usually motivated to maintain or increase his self-esteem, 4 hypotheses concerning academic performance were constructed, and instruments were developed to collect data from a random selection of 220 freshmen (110 males, 110 females) entering Bucknell University in Fall 1965. Data were collected in the first week of the first (Time 1) and second (Time 2) semester to measure the students' level of aspiration (expected GPA), self-involvement, and self-esteem. Success or failure was determined by comparing discrepancies between levels of aspiration at Time 1 and actual GPAs at Time 2. A higher GPA than anticipated was interpreted as success, and a lower as failure. The data indicated that there seems to be no relationship between success and failure and changes in self-esteem; that students' expectations regarding future academic performance is related to current academic success or failure; and that for women, self-involvement in the student role increases with good performance and decreases when they perform poorly. Implications of the findings for the US educational system are discussed. (WM)

SUCCESS, FAILURE, LEVEL OF ASPIRATION, AND SELF-ESTEEM

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Introduction

The purpose of this proposal is to study the way in which the discrepancy between the grades a student expects and the grades he receives (i.e., feelings of success or failure) affects: (1) how well he expects to do in his courses in the future, (2) how personally involved he becomes in each of the fields he studies, and (3) how he explains his relative success, or attributes the blame for his failure in them. In addition, predictions will be made about how the discrepancy between expected and actual over-all performance in college affects the relative importance the student attaches to the academic and the various extra-curricular aspects of his college life.

Social scientists and educators have long been interested in the artifacts of the system we use to evaluate a student's scholastic performance. Originally we assumed that our grading procedure acts as simple reward and punishment, molding the student's future behavior accordingly. But now we recognize the great changes that academic evaluation and the concomitant feelings of success and failure, can effect in a student's life and personal adjustment. It can change a student's entire academic orientation, can cause him to change from one curriculum or one profession to another. Indeed, it even has implications for such major dilemmas as the high-school drop-out problem and the student's confusion about his role as a contributing, effective member of society. Recognition of the important

connotations of academic evaluation seems to have stimulated extensive inquiry (including the present attempt) into these evaluational procedures.

Much of the research done on the effects of success and failure has focussed on changes in the student's level of aspiration (c.f., Sears, 1940; Worell, 1959) -- that is, on his estimate of his future performance. The basic paradigm for this research is: (a) the subject (S) estimates his performance in a task, (b) he completes the task, (c) he is informed that he has done better (success) or not as well (failure) as he anticipated, and (d) he estimates his future performance in that, or related tasks. Summarizing the results of such research, Atkinson (1964) states that "the predominant tendency of subjects to maintain...a level of aspiration that is a little above past performance, and to raise aspiration following success and to lower it following failure, has been observed by many investigators dealing with representative samples of school children and college students as subjects." (p. 98)

Why study this phenomenon? Presumably because level of aspiration (LA) is an important determinant of future performance. Performance may be affected in one or more of four ways. First, as Festinger (1942) and Atkinson (1957) suggest, LA may influence the selection of future alternative tasks. For example, a student who has not done well in mathematics may switch to the social sciences. He limits his selections to those which maximize the probability of later success and minimize the chances of failure (Atkinson, 1958).

Another way in which LA may affect performance can be seen if one considers only those tasks which the person has chosen, or which he is required to perform: LA may influence the amount of effort the person puts forth to reach the aspired level of performance. A student, for example, who feels that he can get no more than a grade of "C" (average) in a required course, may work only hard enough to fulfill this minimal objective; if he expects to get an "A", he may work much harder.

Muscular tension can conceivably result from setting a level of aspiration and confronting success or failure during performance (Leshner, 1961). A person who realizes that he is falling short of his LA may become extremely anxious to the detriment of the satisfactory completion of the task. For example, a student who greatly fears that he will fail his final examination may panic and thus fulfill his prophecy.

Finally, Mausler's (1959) research suggests that the mere existence of a LA, whether high or low, facilitates good performance. This possibility seemingly contradicts the idea that a low LA leads to minimal effort to perform well; it can be explained perhaps by comparing the student who wants to get a C in a course with one who has no expectations at all: if they are both doing poorly, the first has an objective to orient him which the latter does not.

The sterility of the supposition of a direct relationship between past success and failure and future aspirations can be seen in the results of a number of investigations. Freer (1961),

for example, found little correspondence between objective success and failure and aspiration level in college students. Reports of "atypical results" from various sources (e.g., Gardner, 1940; Sears, 1940; Eysenck & Himmelweit, 1946; Miller, 1951; Atkinson, 1958; and Moulton, 1965) indicate that differences in personality modify the nature of the aspiration and the selection of tasks: persons who are neurasthenic, hysteric, and those who have a great fear of failure, all tend to have unrealistically high or unrealistically low LAs, as compared with "normal" persons or with those who have a low fear of failure.

Given, then, that past performance and future aspirations are seldom perfectly related, most research has concentrated on the different ways success and failure affect LA. But is LA the only mediating construct affected by success and failure? Derivations from several formulations about self-identity (i.e., Miller, 1961, 1963; Sherwood, 1965) suggest that, in addition to LA, there are other interacting factors which ultimately affect performance. A theory of self-identity, or one's perception of oneself, is extremely relevant to these considerations: the effectiveness of objective success and failure is completely dependent upon whether or not the person actually perceives himself as having succeeded or failed.

Miller assumes that one of a person's basic motives is to maintain or enhance his self-esteem. Success results in an increase, and failure in a decrease in esteem. The individual may employ one or a combination of several means

to avoid decreasing self-esteem following failure. One is by lowering the LA, thus making it seem to the person that he has not failed by much, if at all, and thus lessening the probability of failure in the future. A student who rationalizes that he really is not very adept in mathematics and should not have expected more than a "C" or "D" in the course, manages to avoid any extreme feelings of failure.

A second means is by decreasing his self-involvement in the task--that is, by making the failure seem less important to him personally. For example, the person who fails a basic course in mathematics, in which he had hoped to do very well and had intended to specialize, may cushion the blow to his self-esteem by "deciding" that mathematics is much less important to him than history. Or, in a broader sense, he may decide that the entire academic aspect of school is less important than, say, the social or athletic features of college life.

Thirdly, the person may cope with a loss of self-esteem following failure by attributing the blame for the failure to outside sources. The student who blames the professor for his failing grade suffers much less of a reduction in self-esteem than the one who accepts all the blame himself.

The foregoing arguments were an attempt to demonstrate that all the variables--LA, self-involvement, and attribution of blame--must be examined as interacting to mediate the effect of relative success and failure upon the selection of, and performance in, future tasks. On the basis of a theory

of self-identity, specific predictions are made about how the discrepancy between the Grade-Point-Average (GPA) a student expects to receive and the GPA he actually receives (success or failure) affects his self-esteem, his self-involvement in his role as a student, and his anticipated future performance in that role.

Related literature and theoretical development of the problem

Since this research is concerned with testing specific hypotheses derived from a theory of self-identity and human motivation, it is necessary to review several basic constructs.

Self-identity is the person's perception of his characteristics, e.g., physical (height, weight), mental (intelligence, grade-point-average), demographic (nationality, religion), personality (dominance, aggressiveness), and so on. This concept has been of particular concern to psychologists and sociologists for a number of years. Contemporary formulations stem from James (1890), Cooley (1902), and Mead (1934), who generally viewed the "self" or "me" as being the reflection one sees in the way others react to oneself. Another approach is that of the theorists who refer to the self as a dynamic entity "striving" for realization (Horney, 1950), actualization (Maslow, 1956), or consistency (Lecky, 1951; Rogers, 1959; Snygg and Combs, 1949).

Our formulation agrees with the former in that the self-identity is one's picture of oneself which derives from the reactions of others. It resembles the latter in the basic

assumption that the individual continually strives to maintain or increase his self-esteem. (This assumption will be discussed more fully later.)

A person's self-identity is subdivided into sub-identities, which correspond to his various roles -- son, brother, friend, student, etc. He has as many sub-identities as there are roles he performs. Each sub-identity has specific characteristics or dimensions, corresponding to particular features of the role. For example, the sub-identity of student may contain dimensions referring to study habits, test-taking ability, or class participation.

The various characteristics of the self-identity have two components: value and self-involvement. Value refers to the person's evaluation of varying quantities or qualities of each characteristic or dimension of his self-identity. For example, varying quantities of academic performance might be all the possible GPAs from 4.00 to 0.00. Varying qualities of nationality would be all possible nationalities. For each characteristic, the individual has personal criteria he applies in evaluating the various quantities and qualities of that characteristic. By finding the appropriate scale, the relative value to him of "being an American" as opposed to "being a German" could be ascertained. Or, the professor's assumption that all students would like to have a GPA of 4.00 could be checked by discovering whether this GPA is evaluated more positively than the "gentlemen's C" (i.e., GPA of 2.00).

Three types of values exist. The first, ideal value, is the quantity or quality of a characteristic which a person sees as ideal. For example, if a person rates "attaining a GPA of 4.00 as the most valuable GPA for him, then this point is the ideal value of GPA, which is an academic performance dimension in the sub-identity of student.

The second, aspired value, is the quantity or quality of a characteristic which the person realistically aspires to have -- that is, which he feels he can rationally expect to attain if he tries his hardest. A student who states that, if all goes well, he can get a GPA of 3.00, is indicating his aspired value for this characteristic.

The third, actual value, is the quantity or quality of a characteristic which the person sees himself as currently possessing. A student may see himself as being exactly as good academically as his GPA indicates, or he may believe that the GPA is an inaccurate reflection of his true performance, in which case his actual value and his GPA would differ.

The second component of identity, self-involvement, refers to the importance to the person of possessing the aspired quantity or quality of a characteristic. For example, a person may see himself as being a very good student and a very good football player. However, these two characteristics may differ in their self-involvement: being a good student is much more important to him than being a good athlete.

The basic motivational construct in this approach is self-esteem, which is the person's positive or negative evaluation of himself, that is, of his self-identity, of all his characteristics combined.

There are two assumptions made about self-esteem (SE):

1. It is assumed that attaining the highest possible degree of SE is a basic human motive. In hedonistic terms, high SE is pleasurable, low is painful; an increase in SE is rewarding, and a decrease is punishing.

Miller states that "the effort to maintain adequate levels of ...self-esteem provides man with some of his strongest motives." (1963, p. 724). This same assumption is made by a number of other theorists--notably Horney (1950), Rogers (1951), Murphy (1947),and Goffman (1959)--and has been used effectively in much research--e.g., Dittes (1959), Wagner (1964), Bermann (1964), Sherwood (1965), and Aronson & Linder (1965).

2. It is assumed that SE is a function of:

a. the degree to which the person sees his actual characteristics as approaching their respective aspired values (the closer to the aspired, the higher the SE).

Past formulations (e.g., Butler & Haigh, 1954) have suggested that SE is a function of the discrepancy between actual and ideal attributes or characteristics. Recently Miller (1963) and Sherwood (1965) have argued cogently that "the ideal self attribute has less influence on behavior than the aspired self attribute, if the latter

is seen as a goal toward which one is motivated, rather than as an ideal standard. The degree of self attribute evaluation (self-esteem) may be better measured by the discrepancy between the self attribute and the aspired self attribute" (Sherwood, 1965, p. 69). This emphasis on the "aspired-actual" discrepancy rather than the actual-ideal discrepancy is based primarily on the research and theory on level of aspiration (See Lewin et al., 1944).

One consistent finding of his research is that people tend to maintain a positive discrepancy between their past performance and expected performance in subsequent tasks. The implication of this for the theory is that once the actual-aspired discrepancy has been eliminated, people increase their aspirations, moving this position closer to the ideal, thereby enhancing the probability of increasing their self-esteem in subsequent activities.

b. the degree of self-involvement in each of these characteristics (the greater the involvement, the more SE varies with changes in the actual value of the characteristic).

c. the degree to which the person sees his actual characteristics as being determined by his <u>own</u> efforts or abilities, rather than by others or fortuitous circumstances (the greater the "self-determination", the more SE varies with changes in the actual value of the attribute).

Miller alludes to this when he says (1963) that the individual with low SE has difficulty accepting responsibility for his behavior. The distinction between attributing blame to external and internal sources has been discussed in Miller & Swanson (1961) and Wagner, Price, & Harburg (1960).

One may also refer to specific self-esteem, that is, the person's evaluation of himself with respect to specific sub-identities of his total self-identity. Thus, one may speak of his SE as a student, as a son, or as an athlete. This specific SE is determined by the same factors described for total SE: (1) discrepancy between actual and aspired positions on particular dimensions or characteristics of the sub-identity, (2) self-involvement, i.e., the importance of particular dimensions, and (3) external and internal determination of the actual position of the dimensions. [1] It is a composite of such specific self-evaluations which, modified by self-involvement in the sub-identity, comprise total SE.

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[1]Since several sub-identities may have one dimension in common (e.g., academic performance may be a part of a student's perception of himself both as a student and as a son), performance relevant to such a dimension could affect the self-evaluation in several sub-identities.

Hypotheses

The following hypotheses are made in the context of academic performance. In this instance, performance is described in terms of a grade-point-average scale ranging from 4.00 (high) to 0.00 (low).

Hypothesis 1: Total self-esteem (SE) does not vary with academic success and failure, that is, with changes in the magnitude of the discrepancy between the aspired and actual value of the characteristic of academic performance.

This prediction is derived from two assumptions: (1) that lowering the total self-esteem is psychologically painful and (2) that the total SE, having been established over a long period of time, is not affected greatly by single events but rather by persistent, pervasive indications of success and failure. The potential effects on total SE are avoided by the use of certain "defensive" procedures which are contained in the remaining hypotheses.

Hypothesis 2: Self-esteem (SE) within the sub-identity of student varies inversely with changes in the magnitude of the discrepancy between the aspired and actual value of an attribute. That is, as aspired and actual values move closer, SE increases; as they move further apart, SE decreases. Exception: If the actual value surpasses the aspired--i.e., if the student does better than he originally felt he possibly could--the SE varies directly with the increase in the actual-aspired value discrepancy.

An example: if a student in college has an aspired GPA = 3.00, has an actual GPA = 2.80 in his freshman year, and then receives a 1.90 in the first semester of his sophomore year, his SE will decrease; with this new information, the discrepancy between aspired and actual GPA has increased from 0.20 (i.e., 3.00 - 2.80) to 0.50 (i.e., 3.00 - 2.50, the latter value being his overall GPA for three semesters, or 2(2.80) + 1.90 /3).

For a beginning freshman, the situation is somewhat different because he has no concrete information on which to base his judgment of his actual GPA. He has an aspired GPA, probably based on his past experience in high school and his perception of how difficult college is. In the absence of objective information, then, his hypothetical or <u>expected</u> actual GPA will be the same as his aspired GPA, unless he foresees circumstances which may preclude his working as hard as he can--such as the time spent practicing for the football team, or commuting to his hometown on weekends to see his girl. Nevertheless, the prediction remains the same for freshmen as for other students: SE varies inversely with changes in the discrepancy between aspired and actual values of attributes.

Assuming that there is a human motive to maintain or increase self-esteem, the following hypotheses are made about means of facilitating a gain or preventing a loss in SE after the experience of success or failure.

Hypothesis 3: As the discrepancy between aspired and actual values of an attribute increases, the aspired value subsequently shifts to a value closer to the actual value; and conversely, as the discrepancy between aspired and actual values decreases, the aspired value shifts to a value closer to the ideal value.

This hypothesis is essentially a restatement of the Lewin et al. (1944) formulation of level of aspiration: confirmation of this hypothesis would be merely a replication of the research on shifts in level of aspiration following success and failure.

In terms of the framework outlined in this proposal, this hypothesis follows from Hypothesis 1. In order to prevent a loss in SE after failure, the individual lowers his aspired level of achievement to reduce the discrepancy between aspired-actual values. Conversely, to facilitate a gain in SE following success, he raises his aspired level to a point closer to the ideal, thus making future success more valuable.

To exemplify: if a student aspires to a GPA = 3.00, has a previous GPA = 2.80, then receives new grades with GPA = 3.00 (success), it is predicted that he will subsequently aspire to a more highly valued GPA--perhaps 3.20. Similarly, if he aspires to a 3.00, has a 2.80, and then receives a 2.00, it is predicted that his aspired GPA will shift downward, perhaps to 2.90 or 2.80.

Hypothesis 4: Self-involvement in a characteristic or sub-identity varies inversely with the magnitude of the discrepancy between aspired and actual values of an attribute.

Exception: if the actual value surpasses the aspired, then involvement varies directly with the magnitude of the discrepancy.

Explanation: Hypothesis 2 indicates that an increase in the discrepancy between aspired and actual values lowers, and a decrease raises, SE. To maintain SE, the individual compensates by decreasing his self-involvement in those characteristics on which he fails.

Example: When the attribute is overall GPA, if the student's actual GPA is below his expectations, his SE would presumably decrease; to prevent an extreme decrease, he "decides" that GPA, or his student sub-identity in general, is not as important as he originally thought, and thus decreases its importance to him relative to other aspects of college life.

When the attribute refers to grades in specific courses, the student's self-involvement in the ones in which he performs below his expectations should decrease, relative to those in which he does as well or better than he expects.

Procedure

In order to investigate the effects of discrepancies between a student's aspired and actual academic performance (GPA) on his self-esteem, the importance he attaches to his academic performance, and the relative attribution of the cause of this discrepancy to internal or external sources, the following procedures will be followed:

Subjects: 220 freshmen (110 males, 110 females) selected randomly from among the 737 entering students at Bucknell University.

Freshmen are ideal Ss for this research. Since they will be new in the University, they will have little information other than that derived from high school experience, parents' and peers' evaluations of them, etc. (see Brookover et al., 1962), on which to base their estimation of their probable end-of-the-semester GPA. A sophomore, on the other hand, has concrete information from the previous year on which to base his statement of actual GPA. It is assumed, then, that a freshman's actual final grades will vary more from his initial estimate than the sophomore's will from his initial estimate.

Administration of Instruments

Data were collected at two different times. The initial collection (Time 1) was during the first week of classes of the freshmen's first semester (1965-1966) at the University. Presumably, it was sufficiently early in the semester that students' expectations, attitudes, or orientations toward their academic performance had not been affected by their one or two-hours' experience in the classroom.

The second collection of data (Time 2) occurred during the first week of the second semester, the earliest time available for so doing after students received their final grades for their first semester's work.

The following instruments were administered.

Time 1:

(1) To measure initial level of aspiration (LA) for GPA a 40-point scale, with values ranging from 0.00 to 4.00, corresponding to all possible GPAs to the nearest 0.10.[2] The S was instructed to indicate the GPA he expected to receive if everything went well for him during the semester.

(2) To measure self-involvement in the sub-identity of student, a 20-point scale on which S locates each of 12 roles according to how much he would like to be perfect in each.[3]

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[2]See Appendix A

[3]See Appendix C

The S was instructed to place the role in which he feels it is most important for him to be perfect at 20 on the scale; then he was to place the role in which it is least important to be perfect at 0 on the scale; finally, he was to fill in the remaining 10 roles where he feels they should be located relative to the first two.

(3) To measure self-involvement in particular academic fields (dimensions of the sub-identity student), a list of all possible fields in which a student could take courses. [4] The S was instructed to check the four fields in which he would be taking courses during the first semester and to rank-order these four, first, in terms of his judgment of their importance to his general education and second, in terms of their importance to his future career.

(4) To measure SE in particular sub-identities or roles, a set of twelve 20-point scales, one for each of the 12 roles noted in (2) above.[5] In order to provide anchor or reference points for the S's judgment, he was instructed to write the first name and last initial, in an appropriate spot on the questionnaire, of five people he knows well. Using the role of student as an example, the S was instructed to write the first name and last initial of the one of the five people whom he feels is the best student at 20 on the scale; then he was

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[4]See Appendix D

[5]See Appendix B

to write the name of the person whom he feels is the worst student at 0 on the scale; finally, he was to indicate where each of the other three people fit on the scale relative to the first two. Then S was to place an "X" on the scale where he feels he belongs relative to the five. If he feels he is better or worse than those he has designated, he places his "X" off the end of the scale to so indicate. This procedure was repeated for each of the twelve scales.

(5) To measure total SE, a 100-point scale for which S was given the following instructions: "Indicate your general evaluation of how good each of the five people you named above in (4) is as a 'human being' -- i.e., over-all, in general. Place the name of the one you feel is the best person at 80 and the least good of the five at 20; fill in the remaining three, then place an (X) on the scale where you feel you are generally, i.e., most of the time."

Time 2

Level of aspiration, self-involvement in the sub-identity of student, self-involvement in particular academic fields were all measured in the same manner as they were at Time 1. SE in specific sub-identities or roles and total SE were measured in a similar manner except it was ensured that the same five persons used as anchor or reference points at Time 1 were also used at Time 2: the first name and last initial of the persons S had designated at Time 1 were written in by E on his questionnaire

for Time 2. In addition to these measures, E secured the GPAs and specific grades for specific courses of each S from the Registrar of the University. Success and failure were determined by obtaining the discrepancy between each S's LA at Time 1 and his GPA at Time 2. A GPA greater than LA was defined as success, a GPA less than LA as failure.

Results

Except where otherwise noted, all analyses of the data were product-moment correlations. Tests of significance of predictions were made using a one-tailed test of significance.

To test the prediction that total SE does not vary with academic success or failure, E correlated (1) the discrepancy between S's expected GPA (that is, his LA at Time 1) and his actual performance during the first semester with (2) the discrepancy between his total SE at the beginning of the semester and after he had received his final grades for that semester.

The data indicate that there is no relationship between success and failure and changes in SE for either males ($r = .04$, n.s.) or females ($r = .02$, n.s.). The null hypothesis is, therefore, not rejected.

The prediction that success and failure academically lead to an increase or decrease in specific SE, respectively, in the student sub-identity was not supported by the data. The correlation of discrepancy scores for academic performance with the shifts in the self-evaluation in the student sub-identity and of six

other sub-identities which are more or less related to the first, are shown in Appendix E.

The data for females indicate that the effect on SE approached significance ($r = .18$, $p < .10$) for the student sub-identity, but that this minimal effect was even less than the corresponding effect for two other sub-identities -- athlete ($r = .23$, $p < .05$) and daughter ($r = .24$, $p < .05$). For males the effect of success and failure on SE as a student is nonexistent ($r = .04$, n.s.). Neither are the other sub-identities affected significantly by academic performance.

The prediction that level of aspiration for future academic performance is related significantly to academic success and failure is supported by the data for both males ($r = .40$, $p < .01$) and females ($r = .59$, $p < .01$). As the frequencies presented in Table 1 demonstrate, persons whose performance (GPA) exceeds

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Place Table 1 about here

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their expectations shift their LAs higher, and those whose performance is significantly lower than their expectations shift their subsequent LAs lower.

The prediction that success and failure in a particular role are significantly related to changes in self-involvement in that role is supported for females ($r = .24$ $p < .05$) but not for males ($r = .12$ $p < .10$). Data for changes in role importance for the sub-identity of student and, for comparative purposes, the six other sub-identities included in the previous analysis of specific SE, are shown in Appendix E.

The prediction that the S's self-involvement in particular dimensions or aspects of the student sub-identity is related to success and failure was analyzed in terms of the relative performance of the individual in particular fields during his first semester. In essence, the prediction was that he will increase his involvement in those fields in which he performs well and will decrease it in those fields in which he does poorly.

Only those Ss whose grades in their four courses were dispersed so that there was a gap of two letter grades between the best and the worst course were included in this sample. For example, a student who received a B, two C's, and a D in his four courses would qualify for this analysis, whereas one who received two A's and two B's, or a C and three D's would not. A t-test of repeated measures was used to analyze the shift in values accorded those courses in which S did well relative to those in which he did poorly. (In the case of a S who received one B, two C's, and a D, the B would be included in the group of courses in which Ss did well, and the D in the group in which Ss did poorly.) The data indicate that for both males and females academic performance in particular fields is significantly related to changes in S's evaluation of their importance to his career ($t = 1.750$, $p < .05$ for men, and $t = 4.568$ $p < .001$ for women). There is no relationship, however, between academic performance in particular fields and changes in their perceived importance to general education.

Discussion

The theory on which this study is based presents a compensatory model of the effects of success and failure on a person's self-esteem. The principal assumption of the theory is that people have a motive to maintain SE. The specific predictions are that, when faced with irrefutable information (course grades) which would lead to a lowering of SE, they will engage in certain psychological procedures which effectively protect the SE. the procedures proposed are changing the level of aspiration (LA), the self-involvement in the roles and in the particular activities, and the self-evaluation of the particular role, about which the irrefutable information is concerned. No predictions were made about the extent to which people will use one or another of these defensive procedures. A given person may use any or all of them -- and which one or ones he uses is probably determined by the specific nature of the relevant activities (in this case, academic performance) and by individual propensities. Therefore, what we have is a series of predictions about the compensatory mechanisms used by students to maintain general SE. Assuming that individual differences in propensities to use one or another mechanism are evenly distributed among the sample of Ss, the main conclusions concern the compensatory mechanisms which tend to be used in the type of success and failure analyzed in this research.

On the basis of the evidence, the null hypothesis -- that total SE does not vary with success and failure -- was not rejected. This hypothesis was based primarily on the assumption that the individual has a motive to maintain a stable SE. However, this

assumption does not preclude the possibility that although not altered by one semester's experience, the student's SE could be affected by continuous and consistent success, or failure. Further study would be able to determine the ultimate effect on SE of persistent success or failure.

On the other hand, it was predicted that more specific SE of the sub-identity of student would be altered by one semester's success or failure. This prediction was not supported. Since total SE is a function of, among other things, self-evaluations of sub-identities, to predict that SE in one sub-identity would change with success or failure but that total SE would not, might seem inconsistent. However, while a change in specific SE can lead to a change in total SE, the effect can be minimized by the other compensatory mechanisms, such as altering the LA or the self-involvement in the student sub-identity.

There are two possible reasons why this hypothesis was not supported. One is that perhaps the same mechanisms operating to protect total SE are operating as well to protect the specific SE of the student sub-identity. Adjusting LA to reduce the discrepancy between actual and aspired performance and altering the importance of performance in particular fields may provide the cushion necessary to stabilize self-evaluation in the student sub-identity. It may take further confirmation, in succeeding semesters, to "convince" the student that he is not as good as, or is better than, he thought originally.

There is the second possibility that the presumed stability of both total and specific SE could be a methodological artifact. Ss' SE was measured on scales which had anchor or reference points of five people whom S knows well (See Appendix B). The purpose of this procedure was to provide unchanging reference points in relation to which S could judge himself. If, for example, his SE increased, S would perceive himself as being closer to the best of the five people he used as referents than he was initially. However, the assumption that the five referents would remain at the same positions on the scales may not have been warranted. Because the first collection of data occurred so close to the beginning of the semester, the five people S knew well may well have been friends from high school or from his home town. It is not hard to imagine that his relative perception of himself, that is, relative to the five, would not change if he had no opportunity to observe them extensively since they parted prior to college. Following failure, rather than see himself as being worse relative to his friends, S might just as easily conclude that the friend who did worse than he did in high school would have done worse too under the same circumstances as those S faced. In other words, lacking information about the friends' performance, he has no grounds for thinking that he and his five friends would not continue to be in more or less the same relative order academically had they all gone to the same college. If all five plus S shifted up or down the evaluative scale together, changes in S's SE would not be evident because the scale used did not allow for such shifts to be shown.

Happily, changes in LA are not difficult to measure validly. The scale (GPA) is very precise and a very real one to the student. The hypothesis that success would result in an increase in perceived potential position on the GPA scale, and failure in a decrease in this expected level, was strongly supported. This result confirms again, in a relatively natural experimental setting, the effects of success and failure on LA. In terms of the self-identity theory, these results support the claim that LA is adjusted to minimize the effects of failure on SE and to enhance the effects of success. For those who failed to achieve their initial aspirations, lowering the aspired GPA decreased the initial discrepancy and protected SE. For those who succeeded, the same discrepancy was non-existent, so the aspired position was raised to an even more potentially gratifying level -- i.e., closer to the ideal, with the slightly positive discrepancy typically found in LA research.

The hypothesis that Ss' self-involvement in the student role would increase with success and decrease with failure was supported for women but not for men. Why this prediction should be confirmed for one and not the other might be explained by the differences in the meaning "being a student" has for the two sexes. Lowering the importance of academics is to question the student's reason for being in college. For men, the implications of good academic performance are an increased probability of attaining a more profitable career than they would otherwise. The era in which an excellent career is ensured merely by having a college degree, irrespective of grades, is declining. Technological training is

more and more important. Graduate schools and large businesses take performance into account, and the number of persons who can move into the "family business" is declining. But for women, there are other rationales for being in college, such as preparing for marriage. While more and more women are entering graduate school or immediately embarking on long-term careers of their own, these are predominantly the top female students. Many of the others leave college for marriage or work for a few years as teachers, government employees, and technicians before marrying, or to support their husbands' graduate education. A woman's academic performance is, therefore, still not as crucial to her long-term future as it is for a man. She can, therefore, more readily alter her rating of the importance of being a student without calling for a subsequent justification of her continued presence in college.

The prediction that the importance of particular fields of academic endeavor varies with relative success or failure in them is strongly supported when importance means importance to one's future career. Both men and women increase their rating of the importance of those fields in which they do relatively well and decrease it for those in which they do relatively poorly. Decreasing his self-involvement in those dimensions of the student sub-identity in which he has failed, and increasing it in those in which he has succeeded, allows the student to maintain his SE more readily. That this should be a conclusive result for "importance to one's career" and not for "importance to one's general education" can also be explained in terms of the meaning

of career for students. The student is very personally involved in his future career. Choosing the right one, and being prepared to pursue it successfully are primarily his responsibility. On the other hand, it is the educators who decide what courses are of "general educational value." Deciding whether or not exposure to social sciences, natural sciences, humanities, mathematics, and language is essential to a "well-rounded education" is not his concern. Who is he to argue against the wisdom of experts? His SE depends much more on his performance in those courses he has decided are relevant to his career than on those someone else has deemed important to a well-rounded education. Hence, the significant relationship between success and failure and changes in self-involvement in the former sense, but not in the latter.

Implications for Education

The results of this study have several implications for the educational process in the United States. The first concerns the effects LA has on performance. As discussed in the introduction to this research, LA can affect choice of tasks (i.e., courses), effort expended, and anxiety about performance. Some of the implications of these three outcomes are readily apparent. A student may choose courses on the basis of how well he believes he will do in them, rather than on their potential value to his education. He may expend only enough time and energy studying a subject as he believes is necessary to attain his aspired grade level -- if the aspiration is low, the expenditure will be low.

And his performance in a course can be affected by the amount of anxiety derived from his perception of how well he is achieving his aspirations -- he may not be able to overcome his poor performance in a course because the resulting anxiety has detrimental effects on his studying or performance in examinations. These are only examples of some of the possible implications of LA for the general educational process.

There are important implications one can derive from the discovery of differences between men's and women's reactions to academic success and failure. From the analysis of effects of success and failure on the importance of the student role, the suggestion arose earlier that women are more ready to decrease their investment in academic pursuits than are men because of the difference in the meaning "being a student" has for both groups. The argument was that education means preparation for a career for men but not necessarily for women, and therefore that men cannot justifiably reduce their investment in the academic role, whereas women can. Consider also the data demonstrating that both men and women increase their involvement in courses in which they have done well, and decrease it in those in which they have done poorly -- when involvement concerns importance to one's future career but not importance to one's general education. The initial implication of these two major results is that men are in college primarily to prepare for a career and, perhaps more to the point, the courses they deem important to their career are those in which they have done well. If this is so, then grading procedures have a very crucial effect in delimiting choice of career.

Educators should be very aware that grades have such a significant effect on the student's future -- and this is likely to be particularl significant at the level of the introductory course. How many educators would be happy with the knowledge that the grades they give in the introductory courses may have as much importance, if not more, than the subject matter of the course in determining who will choose to concentrate in their fields? Not only may a good student not enter a field because of a poor grade received in an imperfect evaluative system, but a poor or only partially involved student may select a field because of a good grade received for the same reason. Educators arguing for an ungraded or "pass-fail" freshman year can find strong support in these data.

This conclusion must be qualified, however, by the possibility that the change in perceived importance of courses and the performance were both determined by a third factor -- a change of interest in the field after the course began. For example, a student may take an introductory course in sociology, in which he has minimal interest, only to fulfill a distributional requirement. However, once in the course, the subject matter (or the teacher) may captivate him and thus lead him to become more involved, work hard, perform well, and even to decide that it is the career of a sociologist that he wishes to pursue. This is most likely to occur when the student has little knowledge about the field before taking a course in it.

Continuing with the data demonstrating differences in men's and women's reactions to academic success and failure, what are the implications of the possibility that women need not be as committed as men to a college education as preparation for a career?

One implication is that treating men and women identically throughout their four years in college may not be justifiable. Unfortunately, our current mores are such that it would take threats of hell and high water to change the orientation and, in effect, to discriminate against women who are "average" academically, while not discriminating against men performing at an equivalent level. Perhaps more attention should be paid to developing programs better suited to the alternatives available to women.

To the extent that careers that are temporary, or that can be interrupted and later resumed, are more realistic for women, specific programs might be designed with these eventualities in mind. Obtaining credentials for elementary and secondary education is one such program now in use, but the variety should be much greater. Professions such as library science, psychological counselling, personnel selection, laboratory technology, and teaching in community and junior colleges are other possibilities.

However, all the foregoing discussion of the implications of this research for education has presumed the importance of the student's orientation toward a career. Few educators assume this to be the sole function of college experience. Personal growth, maturity, becoming well-rounded, self-actualization, and preparation for life or citizenship are some of the terms applied to a second function of education. In terms of this purpose of education, one can be encouraged by the data that show no relationship between academic performance and ratings of the importance of particular courses to one's general education. On the other hand, if our

previous arguments about the importance of a career for men and lowered involvement in the student role for women are valid, the personal growth and maturing effects of education may be of secondary importance to the student. And if they are only secondarily important to him, he is more likely to choose courses and participate in other academic activities on the basis of their relevance to his particular career rather than their importance to his ultimate maturity. In fact, this basis for selecting courses is likely to occur most among those students whom some people feel need the "maturing" the most. For example, the natural science major who is oriented toward medical school who, because he has only minimal grades, is uncertain about his chances of obtaining admission in medical school, will not gamble by taking a course in, say, philosophy, which might broaden his view of life but in which he will probably not perform exceptionally well. Although further research is needed to verify the bases of this conclusion, perhaps educators should review their beliefs about the relative priority of career preparation and personal growth (or maturity, or self-actualization) in light of these data.

Whatever their conclusions about priorities, educators should be encouraged that total self-evaluation or SE seems not to be greatly affected by initial success and failure. Students who do poorly are not completely disheartened by their first semester's performance in college -- they can be salvaged if they improve. The importance of giving extra counsel to students after they have

had their first evaluation should be emphasized. In fact, recent research by Wallace (1966) suggests that many changes in students' self-identities occur within two months of their matriculation. Intensive counselling should perhaps begin well before the end of the first semester. Certainly the next study in this area should include measures of identity change at other times than just at the beginning and end of the semester. What effects continued and consistent success and failure have on SE in the long run has not been clarified by this study. Follow-up research covering later semesters would add valuably to this discussion.

Summary

Using a basic framework derived from a theory of self-identity, predictions were made about the relationship between academic success and failure during students' first semester in college and changes in their general self-esteem (SE), specific SE in the sub-identity or role of student, level of aspiration (LA), involvement in the sub-identity of student, and involvement in particular academic fields in which they took courses. Subjects for the research were 220 male and female students enrolled at Bucknell University. Results indicated no relationship between success and failure and total SE. Specific SE of the sub-identity of student was slightly related ($r = .18$) for women but not for men. Students whose grades exceeded their expectations (success) shifted their LAs for the second semester significantly higher, and those whose grades fell short of their expectations (failure) shifted their LAs significantly lower than they were at the beginning of the first semester. Success and failure were significantly related to shifts in ratings of the importance of the student role for males, but not for females. Both men's and women's ratings of the importance of various academic fields were significantly related to their relative performance in courses in those fields when importance referred to "importance to one's future career" but not when it referred to "importance to one's general education."

The results were discussed in terms of the effects of academic performance on LA, which in turn can affect student's

future performance and choice of courses, the differences between male and female students' orientations toward college education, and the effects of grading procedures on choice of careers and the general meaning of the college experience.

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Table 1

Frequency Distribution of Changes in LA following Success and Failure

Males (N=54)

	Change in LA		
	Decrease	No Change	Increase
LA < GPA (Success)	4	3	18
LA > GPA (Failure)	16	6	7

Females (N=75)

	Change in LA		
	Decrease	No Change	Increase
LA < GPA (Success)	9	7	36
LA > GPA (Failure)	17	4	2

APPENDIX A

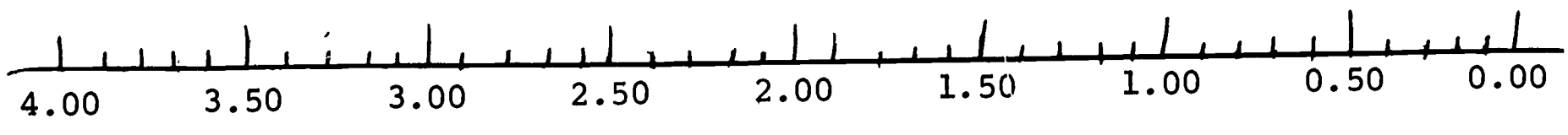
Instrument for Measuring Level of Aspiration

The following scale indicates the possible grade-point averages (GPA) you can get (4.00 to 0.00, where A = 4 points, B = 3, C = 2, D = 1, and F = 0).

(1) Place a "1" on the scale to indicate the GPA you feel you could get if everything went as well as possible for you during the first semester.

(2) Place a "2" on the scale to indicate the lowest GPA which you could receive without feeling ashamed or very disappointed in yourself.

(3) Place a "3" on the scale to indicate the lowest GPA which you could receive without feeling that you should leave college.



APPENDIX B

Instrument for Measuring Self-Esteem in Sub-Identities

A. In this section there is a series of 20-point scales on which you are to indicate your feelings about various types of activities you engage in now, or will do so in the future. Complete these scales in the following manner:

1. Think of 5 people whom you <u>know</u> <u>personally</u>.

   a. Consider only people who are no more than five years older or younger than you.

   b. If you are a male, consider only males; if a female, only females.

2. In the spaces provided below, write their first names and last initials (e.g., Bill P., Joyce C.). You are to use only these 5 people as references in completing the rest of this section.

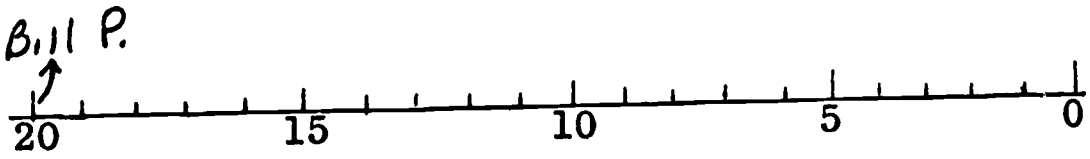
   1._____ 4._____

   2._____ 5._____

   3._____

3. Each of the following scales is headed by a word or phrase which refers to one of the many roles a person may play--e.g., student, athlete, son or daughter, etc. The role "student" will be used as an example for completing these scales.

   a. Think of the 1 of the 5 people you named above who is generally the <u>best</u> student; write his name in at "20" on the scale.



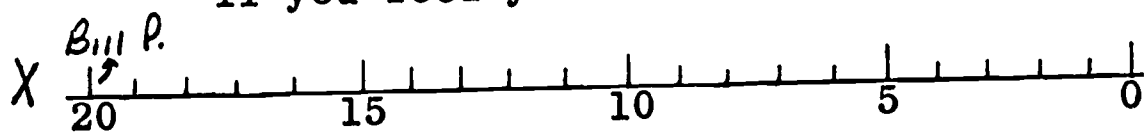
   b. Think of the 1 of the 5 people who is the <u>worst</u> student; write his name in at "0" on the scale.

   c. Take the remaining 3 persons and place each where you think he fits relative to the first two.

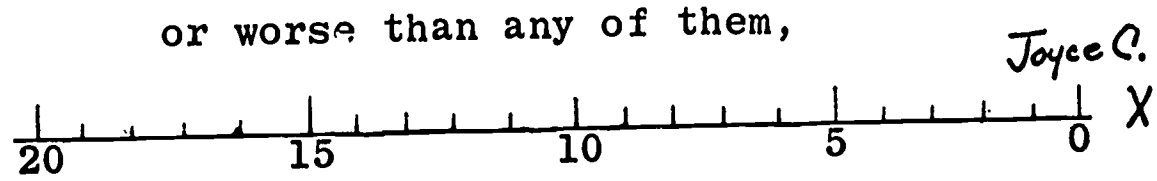
   d. Place an "X" on the scale where you feel you belong relative to the 5 people.

Note: (i) Even though you may feel that all 5 of these people are good students, we are asking you to indicate <u>relatively</u> which is best, which is not as good, and so on.

(ii) If you feel that you are a better or worse student t all of the 5 people, indicate this by placing the "X <u>outside</u> the scale at the appropriate end. For examp if you feel you are better than any of them, write



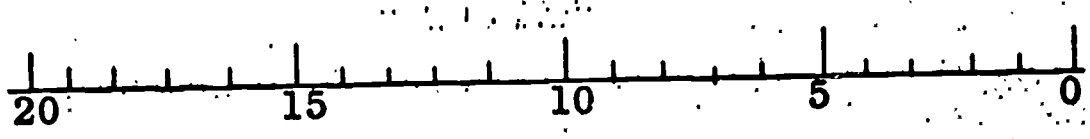
or worse than any of them,



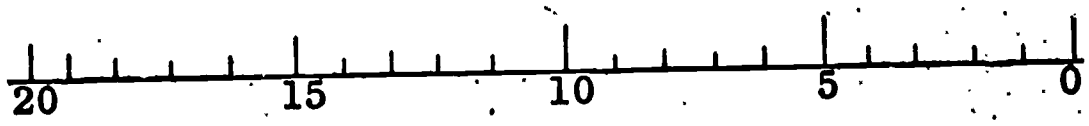
4. Now complete each of the scales, including "student", in this manner--placing the one of the five people who is best at the particular activity or role at "20", the worst at "0", the remaining three in between, and finally, an "X" where you feel you belong relative to them.

Note: (i) In some cases (e.g., husband or wife), the activities or roles may currently be inapplicable to you or to one or more of the five people you named. When this occurs, rate yourself and them in terms of your best guess as to what you or they would be like in this role--i.e., how good a husband or wife you think you and they will be.

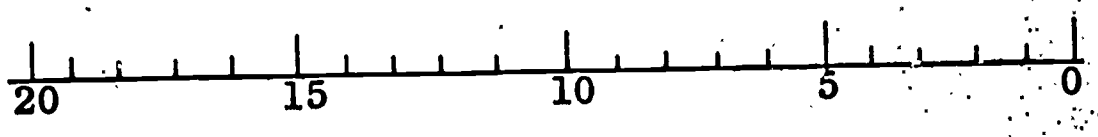
STUDENT



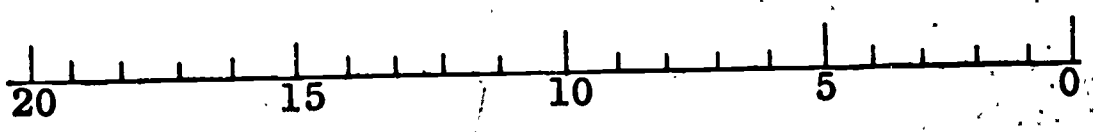
ATHLETE



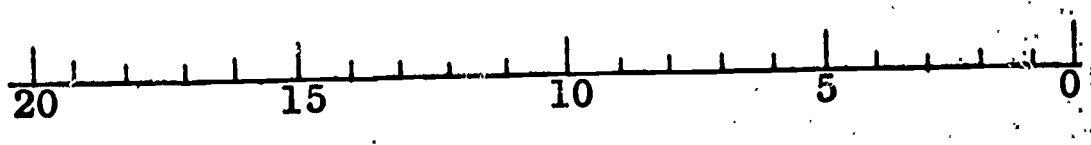
SOCIALLY WITH THE SAME SEX



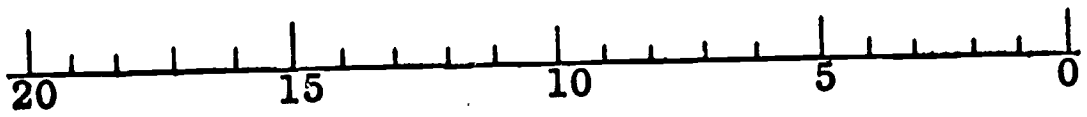
SOCIALLY WITH THE OPPOSITE SEX



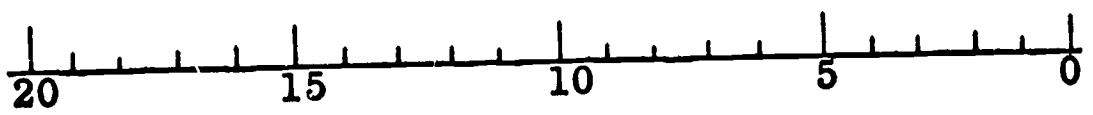
FRIEND TO YOUR TWO CLOSEST FRIENDS



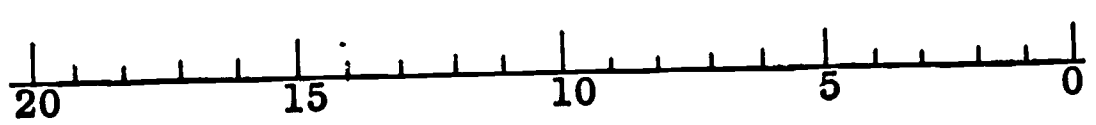
SON OR DAUGHTER



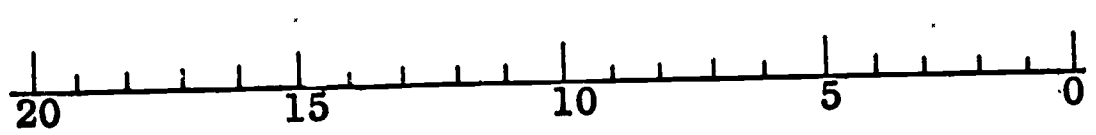
HUSBAND OR WIFE



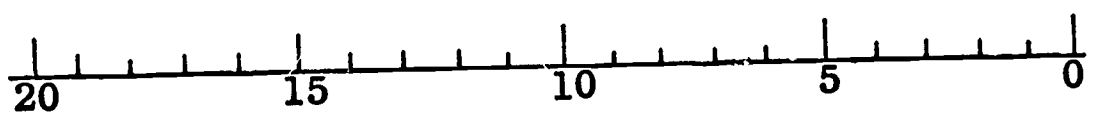
CITIZEN



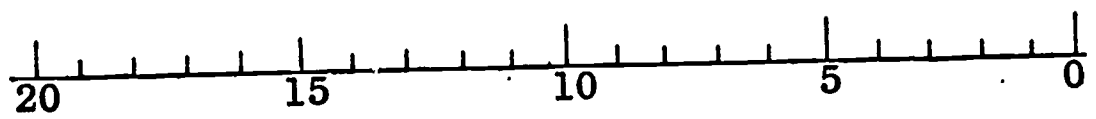
MEMBER OF A FRATERNITY OR SORORITY



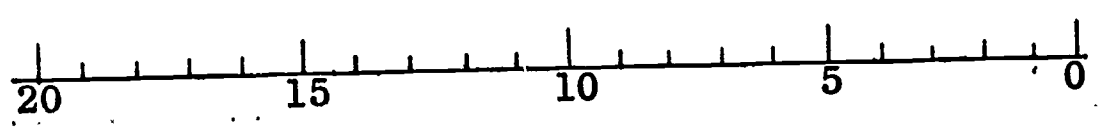
EMPLOYEE



LEADER



MEMBER OF A CAMPUS CLUB OR ORGANIZATION



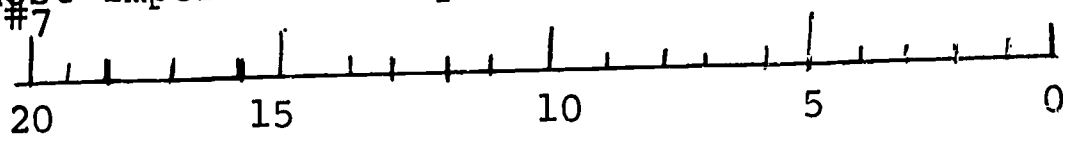
B. Go back over each of the 12 scales you have just completed and place an "A" at the point on the scale which indicates <u>how good</u> you feel you <u>could be</u> in this activity or role if you tried as hard as you possibly could.

APPENDIX C

Instrument for Measuring Self-Involvement in Sub-Identities

On the previous page you rated yourself and others in terms of how well you perform in various activities or roles. On the following scale you are to rate those activities or roles themselves in terms of how important they are to you. Do this in the following manner.

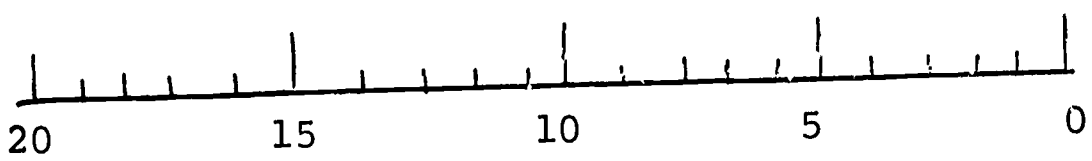
1. Select the activity or role (listed below) which you would most like to be perfect in; write its number at "20" on the scale. For example, if being a perfect husband or wife is the most important for you, write



2. Select the activity or role in which you feel it is least important to be perfect; write its number at "0" on the scale.

3. Fill in the other 10 activities or roles to indicate how important being perfect in them is relative to the two you have designated as most and least important.

1. student
2. athlete
3. socially with the same sex
4. socially with the opposite sex
5. friend to your 2 closest friends
6. son or daughter
7. husband or wife
8. citizen
9. member of a fraternity or sorority
10. employee
11. leader
12. member of a campus club or organization



APPENDIX D

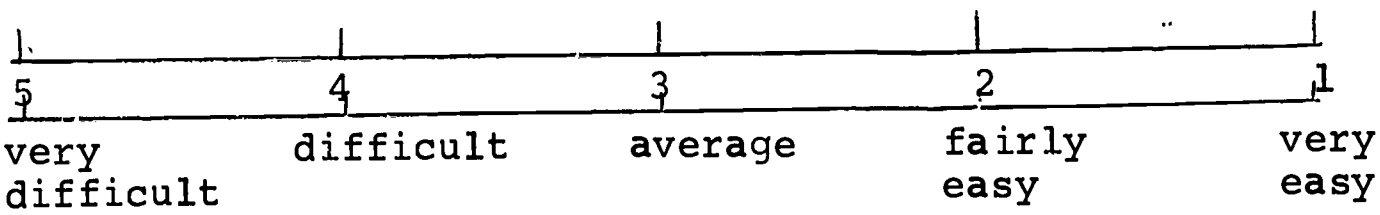
Instrument for Measuring Self-Involvement in Particular Academic Fields

I. On the following page is a list of the fields in which courses are offered at Bucknell. Check the four fields in which you will take courses in your first semester.

A. In Column A on the following page, rate each one of the fields you have checked, in terms of how important you feel the material in the field will be to your general education, that is, to your personal growth and development. Do this by placing the number "1" in Column A after the field you feel will be most important, the number "2" after the field which will be 2nd most important, "3" after the third most important, and "4" after the least important.

B. In Column B on the following page, rate each one of the fields you have checked, in terms of how important you feel the material in the field will be to your expected future career. (If you have not yet decided upon a career, make your ratings on the basis of your best guess as to the general type of career you will have--e.g., teaching, military, business, engineering, etc.) Indicate your ratings in the same way you did for Column A, i.e., place the number "1" after the one you feel will be most important for your future career, and so on.

C. In Column C on the following page, rate each of the fields you have checked in terms of how difficult they are for you. You are to do this by rating each field according to the following 5-point scale:



Indicate the degree of difficulty of the fields for you, then, by writing a 5, 4, 3, 2, or 1 in Column C after each field you checked.

APPENDIX D (continued)

		A (General Education)	B (Future Career)	C (Difficulty
_____	Art	_____	_____	_____
_____	Astronomy	_____	_____	_____
_____	Biology	_____	_____	_____
_____	Chemistry	_____	_____	_____
_____	Classics (Greek, Latin)	_____	_____	_____
_____	Economics	_____	_____	_____
_____	Education	_____	_____	_____
_____	English	_____	_____	_____
_____	French	_____	_____	_____
_____	Geology/Geography	_____	_____	_____
_____	German	_____	_____	_____
_____	History	_____	_____	_____
_____	Italian	_____	_____	_____
_____	Mathematics	_____	_____	_____
_____	Military Science	_____	_____	_____
_____	Music	_____	_____	_____
_____	Philosophy	_____	_____	_____
_____	Physics	_____	_____	_____
_____	Political Science	_____	_____	_____
_____	Psychology	_____	_____	_____
_____	Religion	_____	_____	_____
_____	Russian	_____	_____	_____
_____	Sociology	_____	_____	_____
_____	Spanish	_____	_____	_____
_____	Accounting	_____	_____	_____
_____	General Engineering	_____	_____	_____
_____	Chemical Engineering	_____	_____	_____
_____	Civil Engineering	_____	_____	_____
_____	Electrical Engineering	_____	_____	_____
_____	Mechanical Engineering	_____	_____	_____

APPENDIX E

Intercorrelations of Success and Failure, SE-Shift, LA-Shift, Change in SE for Sub-Identities, and Self-Involvement in Sub-Identities

Males (N=56)

	Correlations with Success-Failure	Correlations with SE-Shift	Correlations with LA-Shift
Success-Failure	1.00		
SE-Shift	.07	1.00	
LA-Shift	.39	-.07	1.00
Change in SE on scale of:			
-student	.04	.08	-.19
-athlete	-.07	.19	.04
-socially with same sex	-.18	.05	-.13
-socially with opposite sex	-.06	-.11	-.17
-son	.16	-.03	-.12
-employee	.19	.28	.06
-leader	-.11	.28	.11
Change in Self-Involvement in Role of:			
-student	.12	.06	.13
-athlete	.19	-.03	.03
-socially with same sex	-.09	.20	-.11
-socially with opposite sex	.04	-.08	.08
-friend	-.03	.26	.003
-son	-.12	-.03	.12
-husband	-.003	.11	-.08
-citizen	-.05	.05	.01
-fraternity member	.06	-.05	-.24
-employee	-.21	.22	-.12
-leader	.06	-.04	.33
-club member	.17	.02	.22

Females (N=75)

	Correlations with Success-Failure	Correlations with SE-Shift	Correlations with LA-Shift
Success-Failure	1.00		
SE-Shift	-.12	1.00	
LA-Shift	.53	-.14	1.00
Change in SE on scale of:			
-student	.18	-.17	.16
-athlete	.23	-.07	.15
-socially with same sex	-.12	.23	.02
-socially with opposite sex	.02	-.15	.11
-daughter	.24	.09	.18
-employee	-.13	-.01	-.03
-leader	.01	.15	-.08
Change in Self-Involvement in Role of:			
-student	.24	.19	.13
-athlete	.15	-.08	.15
-socially with same sex	.10	.19	.03
-socially with opposite sex	.13	.005	.12
-friend	.06	.08	.12
-daughter	.12	.06	.04
-wife	.14	.24	.06
-citizen	-.11	-.05	.03
-sorority member	.32	.24	.13
-employee	.14	.21	.09
-leader	-.04	.05	-.10
-club member	.07		