DOCUMENT RESUME

ED 137 383 TM 006 189

AUTHOR Hackman, Judith D.; Taber, Thomas D.
TITLE A Profile of the Multiple Evaluating Environments within a College.
PUB DATE [Apr 77]
NOTE 72p.; Paper presented at the Annual Meeting of the American Educational Research Association (61st, New York, New York, April 4-8, 1977)

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS Behavior Rating Scales; *College Environment; College Faculty; *Colleges; *College Students; Educational Objectives; *Evaluation; Evaluation Criteria; Evaluation Methods; *Failure Factors; Higher Education; Institutional Role; Organizational Development; Organizations (Groups); Racial Differences; Sex Differences; Statistical Analysis; *Student Behavior; Student Evaluation; *Success Factors
IDENTIFIERS College Criteria Questionnaire; *Multiple Evaluations; Yale College

ABSTRACT

The paper demonstrates an approach for describing educational organizations in terms of their multiple evaluating environments. A college profile is drawn based on the diverse criteria that students, faculty, administrators, admissions staff, and athletics staff use to assess the success or failure of undergraduates. The relative values that 377 respondents placed on 21 dimensions and 12 types of undergraduate performance are analyzed. Differences and unifying themes in their responses are presented, and the impact of multiple institutional goals on organizational diagnosis and development is discussed. (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED137383

A Profile of the Multiple Evaluating Environments within a College

Judith D. Hackman
Office of Institutional Research
Yale University
New Haven, Connecticut

Thomas D. Taber
Organizational Behavior Group
University of Cincinnati
Cincinnati, Ohio

A Paper Presented at the
April, 1977 Annual Meeting
of the
American Educational Research Association

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

CG 006 189

ABSTRACT

A Profile of the Multiple Evaluating Environments within a College (VAR)[1]

JUDITH D. HACKMAN, Yale University

THOMAS D. TABER, University of Cincinnati

The paper demonstrates an approach for describing educational organizations in terms of their multiple evaluating environments. A college profile is drawn based on the diverse criteria that students, faculty, administrators, admissions staff, and athletics staff use to assess the success or failure of undergraduates. The relative values that 377 respondents placed on 21 dimensions and 12 types of undergraduate performance are analyzed. Differences and unifying themes in their responses are presented, and the impact of multiple institutional goals on organizational diagnosis and development is discussed.

[1]The authors wish to thank J.R. Hackman, J.H. Hoskins, M.H.Holford, and P.M. Powell for their contributions to the College Criteria Study.

Introduction

Recall your first days in an unfamiliar place--say your arrival at a new school or the beginning of a new job. Remember the anxiety caused by not knowing what to do, not knowing what was considered "right" or "wrong" behavior. As you became increasingly familiar with the new setting, you undoubtedly found certain people in the organization who gave out signals about what was expected. They were evaluating your behavior in both formal and informal ways, sending out subtle --and sometimes not so subtle--messages; and your behavior, in turn, was being affected by their collective "evaluating environment." You also probably discovered different groups within this responding environment, groups that rewarded and rejected somewhat different kinds of behavior. There actually were multiple evaluating environments to which you responded, each with different goals and expectations and roles in the organization. One of your first tasks in the new setting was to sort out these differing messages and then to form your own interpretation of behavior appropriate for you in this place.

Evaluating environments are an important characteristic of any organization. The purpose of this paper is to demonstrate their existence in an educational organization--Yale College--and then to draw a profile of the college based on the demonstration.

One compelling reason for looking at colleges as multiple evaluating environments is the current (and perhaps perennial) crisis of purpose in higher education. Even college presidents have been heard to demand "a new rationale for why students should go to college and for why society should support higher education" (Newman, CHE, 9/27/76). In many quarters there is serious doubt about the relevance of academic values for today's increasingly more complex and industrialized world. It should be instructive to examine colleges and universities in terms of their conceptions of purpose. We shall do this by studying how a college community evaluates the success and failure of its undergraduates

on the grounds that the successful education of students is one of the two major purposes of colleges, complementing and sometimes competing with their research purpose.

In discussing the lack of research on colleges and universities as organizations, Smart and Elton (1975, p. 580) note that "comprehensive analyses of American colleges and universities are seldom found in the literature of higher education." They report that McConnell (1963) attributed this dearth of organizational research to the absence of an acceptable conceptual framework which would promote systematic thinking about the ways colleges are organized and which would lead to substantive new hypotheses for investigation. Cohen and March (1974) contend that colleges and universities belong to a class of organizations called "organized anarchies," because they have ill-defined goals, lack an acceptable educational technology, and operate by a decision-making process in which individual participants vary from one time to another.

The approach to describing organizations that we propose in the current paper is one type of framework that can be applied both to colleges and to other kinds of organizations. The examination of multiple evaluating environments is a way to assess both the existing and the ideal goals that a college community holds for its students.[2]

Describing organizations in this way seems especially important for organizations in which people are the primary product. Organizations have been described at many levels (e.g. normal structural approaches such as Hall's study of bureaucracy (1963)and the Aston group's analysis of organizational structure (Pugh et al,1968)). But seldom are they described at a level of analysis that leads to understanding of the behavior of individuals within them. When the product of the organization is individuals, then such an approach is particularly appropriate.

In a number of organizations, such as colleges and universities, mental hospitals, prisons and correctional institutions, the major goal is to alter the "people-products" in accordance with some institutional standards--some of which

---

[2]Somewhat related modes of research to describe organizations would be Dawis et al.'s analyses of organizations as reinforcer systems (Dawis, et al., 1974; Smart, 1975), and the study of organizations as systems of goals (See Wieland & Ullrich, 1976).

may not be explicitly recognized by the institution. Many decisions crucial to the individual are made as a consequence of whether he or she is evaluated as "successful"--or "cured" or "reformed" or "educated."

There are several additional reasons for describing organizations in terms of their multiple evaluating environments:

1. In intensive technology organizations where human beings are the products, the norms about success and failure of the people-products largely determine the environments that exist for the persons in the system. In understanding human behavior in a college, then, it is necessary to describe the environments in which students exist.

2. People-product organizations differ in a very important way from all other types of organization. The product thinks. Steel ingots, automobiles, electric clocks and even computers cannot change themselves as a function of their awareness of others' expectations about them; students, mental patients, and prisoners can and do.

3. The ideas about success and failure held by several key "gatekeeper" individuals (Lewin,1951) have a powerful effect over decisions as to who is allowed to enter an organization, what resources are available to those who enter (e.g., scholarships, honors, special curricula, etc.), who remains in the organization, who leaves it and with what credentials. It is useful to identify these gatekeepers and to determine their conceptions of successful and unsuccessful people-products (e.g., successful and unsuccessful student performance).

4. Formal institutionalized measures of success and failure may differ in significant ways from the actual criteria-in-use of the key members of an organization. For example, a college may base most formal student-related decisions on grade point averages, when most members of the organization use very different criteria to evaluate students and send out very different day-to-day signals about their conclusions. These criteria in real use may, in turn, differ from the ideals about student success and failure held by the members.

5. Etzioni (1966) has questioned the utility of describing an organization in terms of the gap existing between its actual and ideal goals. Such a gap, he says, is to be expected in all organizations. However, in people-product organizations, such gaps--even if expected--need to be identified and understood. Inconsistencies between real and ideal may be considerable for some of the key "gatekeepers" and this may produce organizational conflict. These gaps also may produce conflict and anxiety in the students who are evaluated in inconsistent ways by various of the multiple environments in which they find themselves.

In college organizations, the students are both product and part of the evaluating environment. Undergraduates can choose, in fact must choose, to participate in a number of quite different evaluating environments within a college community. The groups of people with whom students associate and to whom they attend will strongly affect what they learn in college.

As undergraduates move through a college organization, from admission to graduation (or withdrawal), the college community has a constant effect on their education and socialization. In any college there are actually multiple evaluating environments who affect and educate students with their rewards and punishments. These diverse evaluators can be classified in a number of ways. Perhaps the most rational division is among the formal structures that have a direct contact with students in an educational function. These are the groups that we will look at in this paper: students, faculty, deans and masters (masters are the heads of the 12 residential colleges at Yale where students live, eat, and have varying degrees of social and educational attachment), admissions staff (the initial gatekeepers), and athletic coaches. We will analyze the two largest and probably most influential groups--students and faculty--in more detail.

Many argue that an undergraduate's fellow students have more impact upon his or her education than any other members of the college community. They have more frequent access to the individual student and see him or her in a greater

variety of settings than do most other groups. Campbell (1971) suggests that "the output of college is more dependent on the type of student input than on any characteristics of the institution" and that "good students are themselves an educational resource" (pp. 645-6). Within a student body there are many different groups; one breakdown can be made along demographic lines. In this paper we look at the varying ways that men and women evaluate student performance, compare the distinctions of racial groups, and examine differences among class years.

We have divided the faculty along departmental lines. Previous research has demonstrated that departments differ in a number of ways(Gamson, 1966; Lodahl, J.B., & Gordon, G., 1973; Vreeland, R.S.,&Bidwell, C.E., 1966). We have used Biglan's 3-way classification of academic disciplines that groups departments according to (1) the degree to which they have a paradigm (hard-soft), (2) their concern with life systems as objects of study(life-nonlife), and (3) their emphasis on application (pure-applied)(Biglan, 1973a). Biglan (1973b) and Smart and Elton (1975) have found that academic departments classified by this model differ in departmental goals, task commitments, social connectedness, and scholarly output. Our comparisons will test whether they also differ in the values they hold for student success and failure.

Organization of the Paper

We will demonstrate the multiple evaluating environments approach to studying colleges as organizations by examining the following six hypotheses:

Hypothesis I. A college's evaluating environment uses multiple criteria.

Hypothesis II. The predominant types of student success and failure in a college's evaluating environment are varied in content although relatively few in number.

Hypothesis III. Faculty, student, administrative, admissions, and athletic groups within a collge evaluate student performance differently.

Hypothesis IV. The dimensions and types of student performance that faculty members value differ significantly among academic departments classified according to Biglan's model.

Hypothesis V. The dimensions and types of student performance that undergraduates value in their fellow students differ according to the undergraduates' sex, race, and class year.

Hypothesis VI. An analysis of a college's multiple evaluating environments can provide a profile of the college's central values and can clarify the many forces affecting and educating its students.

After briefly reviewing the Method of the College Criteria Study, on which this paper is based, the six hypothesis will be considered one by one. Each of the Results and Discussion sections will describe analyses relevant to a hypothesis and then report and discuss our findings about that particular aspect of a college's evaluating environment. Results tables will be found in Appendix A.

The Summary and Conclusions section will summarize the profile that we have developed for Yale College and then consider other ways that this approach to organizational analysis might be used and studied.

Method

This paper is based on the College Criteria Study, a research project that examined the multiple criteria used by a total academic community (Yale College) to evaluate the success and failure of its undergraduates.

Procedures. Data gathering procedures are described in detail in an earlier paper (Taber & Hackman, 1976). Respondents were asked in an interview setting to nominate, from the classes of 1973-1977, two undergraduates whom they considered "most successful" and two considered "least successful" students. They then described each of their four nominees simultaneously on the College Criteria Questionnaire (CCQ). The CCQ is a behaviorally anchored rating instrument, developed in pilot research, that includes 67 comprehensive categories used by this academic community to evaluate student performance.

Sample. A total of 434 members of the Yale College academic community were contacted, of whom 377 (85%) completed the CCQ. The 377 respondents included 116 faculty, 212 undergraduates, 25 administrators (deans and masters), 12 admissions staff, and 12 athletics staff. The analyses in this paper are based on respondent-nominee units. That is, each description of a nominee and the data about that respondent is treated as a separate case. No nominee is included more than once but respondents are included in 1 to 4 units.

CCQ dimensions. Previous analyses of the 67 CCQ categories identified 21 underlying dimensions that we have grouped into five areas of academic life--general academic, specific academic, personal, interpersonal, and institutional (Taber & Hackman, 1976). Dimension scores for each nominee were formed by averaging ratings across those categories best defining a dimension. These dimensions are presented in the first Results and Discussion section, Hypothesis I.

Student patterns. Two student typologies were developed from nominee descriptions on the 21 dimensions using multivariate statistical procedures (Hackman & Taber, submitted for publication). Success patterns were derived from descriptions of the "most successful" nominees and have been named: Leaders, Scholars, Careerists, Grinds, Artists, Athletes, and Socializers. The nonsuccess patterns were derived from "least successful" descriptions and include: Extreme Grind, Disliked, Alienated, Unqualified, and Directionless. Validity of the typologies was assessed further by analyses of differences among the types on demographic characteristics, quantified admissions data, college records, and post-college plans. The student patterns are described under Hypothesis II.

Compilation of the college profile. The relative values placed by respondents on the 21 dimensions and 12 types were analyzed. Analysis of variance, multiple discriminant analysis, and other techniques were used to identify significant differences among the following kinds of respondent groups and to determine common values across groups.

Comparison of five college groups. Hypothesis III in the Results and Discussion contrasts the criteria that the five formal groups of respondents--faculty, students, deans and masters, admissions staff, and athletics staff--use to evaluate student performance. Analyses comparing the five groups on the 21 criterion dimensions are presented. We report the priorities that the five groups assign to the dimensions both in evaluating the real students that they nominated in the study (real use) and in rating how much they would ideally use each of the dimensions if they had comprehensive information about students (ideal use). We also report the student types valued by each college group by showing the distributions of types into which each

groups' nominee descriptions were classified.

Comparison of six departmental faculty groups. Hypothesis IV examines our faculty respondents divided into groups according to the academic classification empirically developed by Biglan (1973a, 1973b) and further validated by Smart and Elton (1975). The Yale College academic departments fit into 6 of the 8 cells formed by Biglan's three-dimensional model. Dimension one reflects the degree to which a paradigm exists in a specific academic discipline and is labeled hard-versus-soft. The second dimension reflects an academic area's involvement with living or organic objects of study and is named life-versus-nonlife systems. The third dimension, pure-versus-applied, reflects a discipline's concern with the practical application of its subject matter. Two of Biglan's 8 cells (Soft-Life-Applied and Hard-Life-Applied) are omitted from our analyses as none of the Yale College academic departments directly resemble these (primarily teacher education and agricultural) areas. Most of the Yale departments appear in one of Biglan's articles, but those that do not were logically assigned to a group. The six groups are compared on their real use of the 21 criterion dimensions for evaluating student success and nonsuccess, on the classification of the students they nominate into types and on their ideal use of the dimensions.

Classification of students by demographic characteristics. Students were originally selected to participate in the study according to a 3-way stratification of sex, race (black, Spanish-American, and white & other), and class year (freshman, sophomore, junior, senior). In the Hypothesis V section, we report significant differences in the kinds of performance valued by students of different sex, race, and class year.

Results and Discussion: Examining the Six Hypotheses

Hypothesis I. A college's evaluating environment uses multiple criteria.

This hypothesis asserts that a college community uses complex and multi-dimensional criteria to evaluate undergraduate performance. It proposes that the traditional, unidimensional college criteria--particularly grades and test scores--are narrow and limited compared to the actual, day-to-day yardsticks on which the success and failure of students is measured. From the student's perspective, a very complex set of criteria must be satisfied in order to gain rewards and avoid punishments.

In an earlier paper, we have shown that the criteria actually used by the college community examined (Yale College) can be described by 21 comprehensive criterion dimensions of student performance (Taber & Hackman, 1976). Although this set of dimensions does not cover every kind of student performance that members of every American college would consider important, we do believe that it is quite comprehensive and that it encompasses most of the criteria for most colleges.

The 21 criterion dimensions are listed below, grouped into five areas of college life--general academic, specific academic, personal, interpersonal, and institutional. Each dimension is defined by the categories from the College Criteria Questionnaire (CCQ) that make up that dimension; criterion dimension scores analyzed later in the paper are formed by averaging ratings across these component categories.

* * *

College Criteria Questionnaire Dimensions

GENERAL ACADEMIC DIMENSIONS

(1) Intellectual Growth--intellectual development during undergraduate years

(2) Cognitive Proficiency--skill in abstraction, analysis, and synthesis of ideas plus general intelligence

(3) Communication Proficiency--skill in written communication and in spoken communication

(4) Intellectual Perspective & Curiosity--intellectual curiosity, intellectual perspective, integration of content from various fields, breadth of knowledge or information, and application of abstract concepts to particular situations

(5) Creative Performance--perceived creativity and originality

(6) Academic Effort & Achievement--fulfillment of course requirements, exertion of academic effort in studies, organized efficient manner, overall academic achievement (especially grades), potential for professional/graduate school entrance, commitment to learning, general goal achievement, undertaking of unassigned academic work

(7) Self-Directed Behavior--self sufficient, self-directed manner and general goal achievement

(8) Career Goals--career plans, set of personal goals, and commitment to an academic field

SPECIFIC ACADEMIC DIMENSIONS

(9) Mathematical Proficiency--skill in handling mathematical concepts

(10) Foreign Language Proficiency--fluency in speaking one or more foreign languages

(11) Artistic Performance--artistic achievement level and general artistic activities and interests

PERSONAL DIMENSIONS

(12) Personal Growth--personal development during undergraduate years

(13) Optimistic, Emotionally Stable Behavior--easygoing, relaxed manner, personal enjoyment of life in general, optimistic manner, perceived mental stability and adjustment, and ease of socializing with others

(14) Ethical Behavior--set of personal values, dependable and trustworthy behavior toward others, ethical behavior, honesty in relations with others

(15) Athletic Performance--athletic achievement level and general athletic activities and interests

INTERPERSONAL DIMENSIONS

(16) Participation in Organizations--leadership skills, range of activities and interests, balance between academic and nonacademic life, contribution to Yale, participation in student organizations, participation in community activities and interests, participation in political activities and interests

(17) Interpersonal Sociability--amount of interaction with other people, extent liked or respected by others, ease of socializing with others

(18) Interpersonal Responsiveness--sensitive and understanding manner toward others, openness and tolerance to differences in others, helpful and altruistic manner toward others, extent liked or respected by others, and using other people for their mutual benefit

(19) Discrimination Issues Behavior--dealing with interracial issues and dealing with sexist issues

INSTITUTIONAL DIMENSIONS

(20) Persistence Toward Graduation--highest rating for graduation and lowest for permanent withdrawal from the college

(21) Congruence with the College--enjoyment of Yale College, extent suited to Yale College academically and nonacademically, and using resources of Yale College

Hypothesis II. The predominant types of student success and failure in a college's evaluating environment are varied in content although relatively few in number.

Hypothesis II proposes that a variety of patterns of student behavior are rewarded and punished in any educational organization and that it is possible to preserve the complexity of these patterns in a relatively small set of student types. Although each student is unique and charts a singular course through college, we propose that for any particular college certain patterns of performance frequently recur. These patterns, somewhat analagous to syndromes, can then be used to examine and describe the college organization. We can see which types are valued by which groups in a college and also can draw conclusions about the total configuration of types that predominate in that particular evaluating environment.

Earlier analyses have identified 7 student patterns considered particularly successful in Yale College and 5 considered unsuccessful (Hackman & Taber, submitted for publication).[3] Each of the 12 types is characterized by a unique profile of scores across the 21 criterion dimensions described on the previous pages.

The success types, derived from the 518 successful nominee descriptions, have been labeled:

Leaders Scholars Careerists Grinds
Artists Athletes Socializers

The nonsuccess types, derived from the 467 unsuccessful nominee descriptions, have been called:

Disliked Extreme Grind Alienated
Unqualified Directionless

We present these patterns graphically in Figure 1, plotted against a background that gives the range of profile means for all success or nonsuccess types.[4] To prepare the profiles, we first standardized dimension scores across the entire

[3] Hackman & Taber (submitted for publication), describes the patterns and their development in detail and also demonstrates how they differ on demographic variables, admissions data, college records, and post-college plans. Reference is Note 5.

[4] Figure 1 is on the last page of this paper.

combined sample of successful and unsuccessful nominees and then computed means among all nominees classified into a particular type. Analyses reported later in this paper are based on classifications of nominee descriptions into the type that each most closely resembles.

Hypothesis III. Faculty, student, administrative, admissions, and athletic groups within a college evaluate student performance differently.

Hypotheses III through VI propose that conceptions of student success and failure differ significantly among formally and informally defined organizational subsystems within a college. In Hypothesis III, we predict that there are important differences in the dimensions and types of undergraduate behavior valued by the 5 respondent groups in our study--faculty, fellow students, educational administrators (college deans and masters), admissions people, and athletic coaches.

The differences among these 5 groups will be examined from several perspectives:

--Information available. How much information about students is available to each of these college groups?

--Real use of criterion dimensions. Are there statistically significant differences among the five groups in their use of the total set of 21 dimensions to describe real students whom they nominated as particularly successful? as particularly unsuccessful?

--Ideal use of the criterion dimensions. How important do the groups consider the dimensions in the ideal case? That is, how much would they hypothetically use each of the dimensions if they had full information about a student?

--Real use of the types. Do the 5 groups differ significantly in the patterns of performance that they consider particularly successful? in the patterns they consider unsuccessful?

Although this hypothesis and those that follow are touched upon in earlier internal reports (Hackman & Hoskins, Note 1; Hackman & Hoskins, Note 2; Hackman, Note 3; and Hackman, Note 4.), we will present more detailed analyses here than we gave for the first two hypotheses which are fully reported elsewhere.

How much information did the five groups have about nominees? One test of this is the frequency with which each dimension was actually used. If respondents did not use a dimension to describe a student they probably had little or no information on which to evaluate the student's behavior in that dimension. (They might also have considered the dimension simply irrelevant, but respondents were explicitly asked to complete every CCQ item for which they had sufficient information to make a judgment, and most did) Table 1 (in Appendix A) reports the percentage which each dimension was used to describe "success" and "nonsuccess" nominees by members of each of the 5 college groups.

More information was used to describe successful nominees than to describe unsuccessful ones. Percentages of use were higher overall for the successful nominees on 20 of the 21 dimensions; (the Personal Growth dimension was the single exception). Percentage of use ranged from a low of 57% (Foreign Language Proficiency) to a high of 94% (Persistence Toward Graduation). All but the two growth dimensions (Intellectual and Personal Growth) and the five topically specific dimensions (Artistic and Athletic Performance, Foreign Language and Mathematical Proficiency, and Discrimination Issues Behavior) were used more than three-fourths of the time.

Students had more information than faculty members on 18 of the 21 dimensions. Faculty used the general academic dimensions as much as, or more than, students did, but used the specific academic dimensions much less. There was little difference between student and faculty respondents in use of the personal dimensions and the two institutional dimensions; faculty used the interpersonal dimensions considerably less than did students.

These differences must be interpreted with caution; it is impossible to know whether a respondent had actually observed a particular behavior in every case, or whether he or she was certain about some items and filled in the others to match his or her personal "theory of personality".

Do the five groups differ in their use of the 21 dimensions to describe real students? How do they differ? Before looking at how the groups differ in their evaluations of students, it is necessary to establish whether they differ. They do. Tables 2 and 3 (Appendix A) present the results of discriminant analyses which show that the 5 groups vary significantly in their overall use of the performance dimensions to describe successful students (Table 2) and again to describe unsuccessful students (Table 3) (Nie et al., 1975).

For the success descriptions, three significant functions ($p<.001$, .001, .05) were found with the first function accounting for half of the variance. Classification into the 5 groups based on the discriminant functions was correct for 53.9% of the respondents with a majority of the misclassifications occurring between the faculty and student respondents (i.e. students misclassified as faculty and faculty misclassified as students). Many of the deans and masters were scattered among the other groups, suggesting that they do not unanimously agree about what constitutes student success.

Three significant functions ($p<.001$, .001, .01) also were found for the nonsuccess descriptions, with the first function accounting for over three-fourths of the variance. Classification was correct for 55.7% of the respondents, with over half of the students misclassified across the other 4 groups, and with faculty misclassifications grouped more with administrators and coaches (rather than with students as was the case for their success descriptions).

Figure 2 describes the spatial relationships among the 5 groups' descriptions of success students by plotting their centroids on functions I and II. Figure 3 plots them for nonsuccess. Interpretations of the functions are not clearcut, but it is possible to draw some inferences from the standardized discriminant coefficients reported in Tables 2 and 3. (These coefficients usually indicate the relative contribution of each predictor variable to a function, although it is possible to find on a positive centroid a group that does not score higher on the dimensions with positive coefficients (Tatsuoka, 1971).)

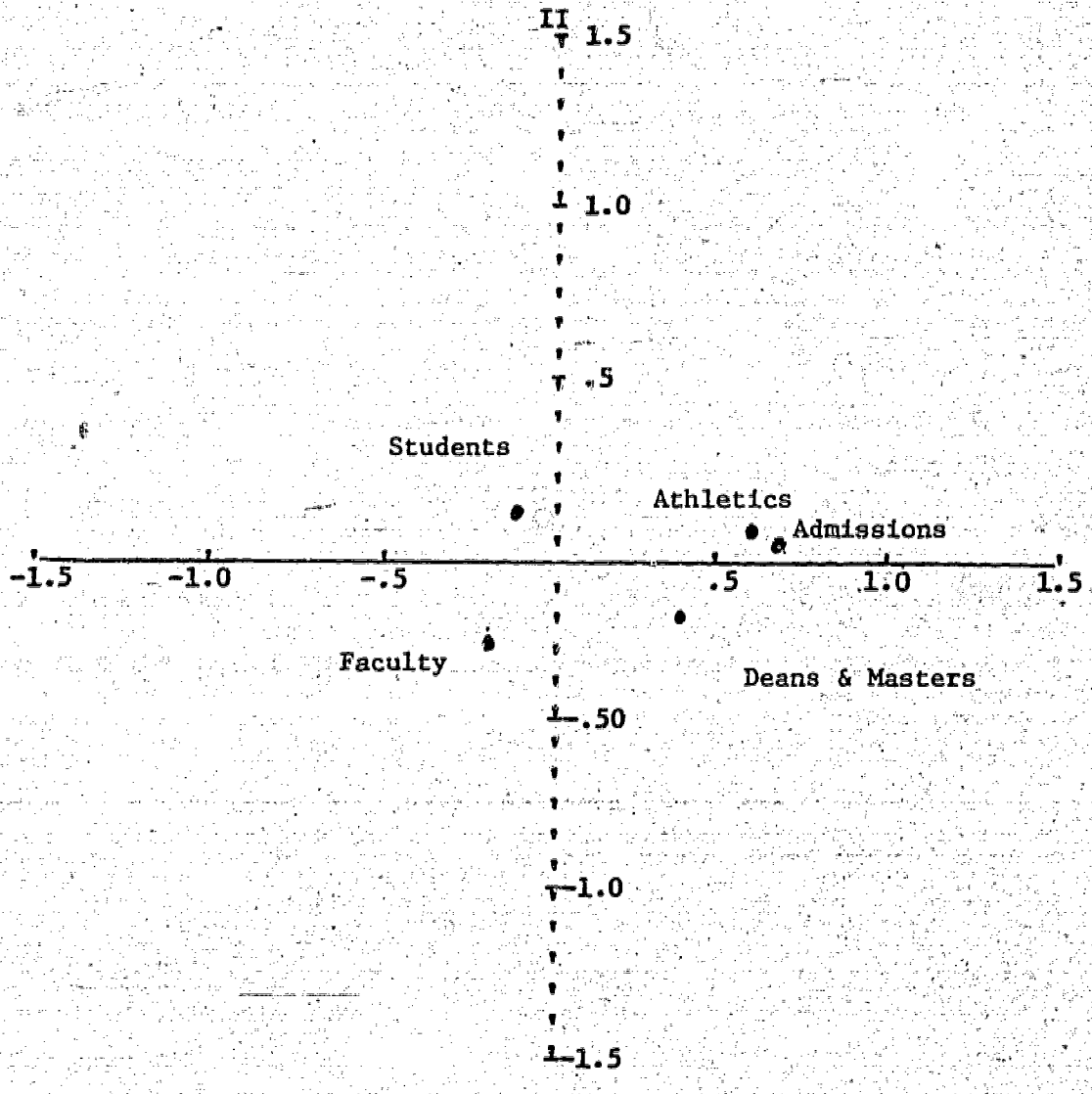


Figure 2

Centroids of Five College Groups for Success Student Descriptions on Discriminant Functions I and II

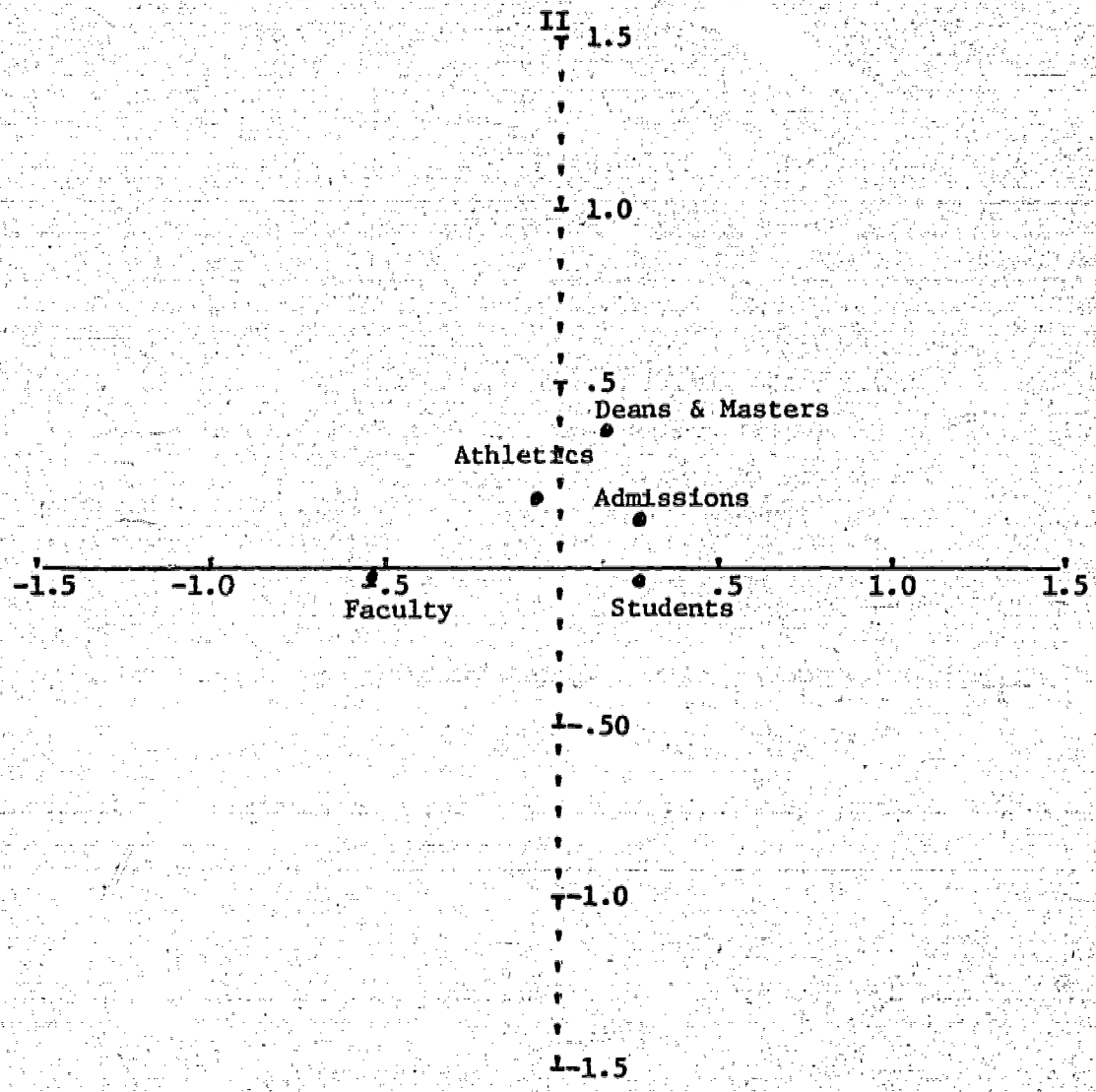


Figure 3

Centroids of Five College Groups for Nonsuccess Student Descriptions on Discriminant Functions I and II

To help interpret differences among the 5 groups, we ranked the relative importance each gave to the 21 dimensions. These rankings are given in Table 4 (Appendix A) together with the correlations between dimension rating and type of success (whether successful or nonsuccessful) from which they were derived. If a correlation between dimension rating and type of success is high, that indicates that this dimension is considered important for determining level of success. Conversely, a low correlation indicates poor discrimination between success and nonsuccess.

Combining the information in Table 4 with the placement of the 5 groups in Figures 2 and 3, we can make the following conclusions about the groups' differences in student evaluation:

Faculty and students appear to agree more with each other, particularly in determining successful students, than with the other 3 groups. Function I in Figure 2 clearly makes this separation, with the coaches, admissions staff, and deans and masters placing more emphasis on nonacademic aspects of college--Participation in Organizations, Ethical Behavior, Athletic Performance, Personal Growth--than do the faculty and students overall. This conclusion is supported by the relative importance rankings in Table 4. Function II is not as easily interpreted, partly because the 5 groups are not really dispersed widely. The difference between those falling above and below the axis appears to be their emphases on traditional criteria--Academic Effort & Achievement (especially grades) and Persistence toward Graduation--versus Self-Directed Behavior. Faculty emphasize the traditional criteria more than the students.

There are areas of considerable agreement among the different segments of the college community. Most groups give high importance to Congruence with the College, Academic Effort and Achievement, Emotionally Stable Behavior, Self-Directed Behavior, and Intellectual Perspective and Curiosity. They also agree on which dimensions are peripheral to success--the 3 specific academic dimensions, Athletic Performance, Discrimination Issues Behavior, and Persistence toward Graduation.

How would the five groups ideally use the dimensions? After describing their nominees, respondents were asked to consider how important they would find each CCQ category when discriminating successful and unsuccessful students from average students, providing they had adequate information on all the categories. These responses should reflect the importance of each dimension in the ideal case.

The "ideal" rank order of the 21 dimensions is given in Table 5 (Appendix A). All of the general academic dimensions (except Career Goals), Ethical Code Behavior, Personal Growth, and Congruence with the College rank in the top ten, and receive ratings which suggest that they would be used frequently (3.50-4.50 on the 1-5 point scale). Lowest are the 3 specific academic dimensions, Athletic Performance, Discrimination Issues Behavior, and Persistence toward Graduation.

How does "ideal use" compare with "real use"? Many dimensions are accorded approximately the same importance in the "real" and the "ideal", but there are several discrepancies between what respondents say they would ideally do with sufficient information and the dimensions they actually stress in evaluation of real nominees.

The following dimensions were ranked as only moderately important in the ideal ratings, but in fact were very powerful discriminators of success among actual students.

Criterion Dimension	Rank of "Real Use"	Rank of "Ideal Use"
Congruence with the College	1	8
Academic Effort & Achievement	2	10
Emotionally Stable Behavior	3	9
Cognitive Proficiency	6	11
Interpersonal Responsiveness	8	13

Conversely, some dimensions rated as very important in the "ideal" ranked much lower in actual use.

Creative Performance	10	4 (1 for success
Intellectual Growth	8	2 evaluation)
Personal Growth	13.5	4
Ethical Code Behavior	15	6

At least two alternative explanations could be given for the considerable differences between the importance respondents give some dimensions in describing real students and the importance they say they would give these same dimensions in the ideal situation. One possibility is that behavior for some dimensions is more easily observable than others, and that on some dimensions Yale students do not differ enough to make the differentiation between "successful" and "unsuccessful" behavior possible. Academic Effort and Achievement, Congruence with Yale, and Emotionally Stable Behavior may be readily observable aspects of behavior in the sense that the respondents use them, whereas Personal Growth, Intellectual Growth, and Creative Performance are difficult to observe. This difference in observability may have caused the differences between rankings for these dimensions.

A second possible explanation, however, is that what people say they value and what they do value are not always the same. In reality, Academic Effort and Achievement, Congruence with Yale, and Optimistic, Emotionally Stable Behavior may carry more influence with the Yale community than it knows; and Creative Performance, Intellectual Growth and Personal Growth may receive less recognition than the community believe it accords.

What types of student behavior do the five groups value? The patterns of successful and unsuccessful performance that the 5 groups of respondents described are reported in Tables 6 and 7 (Appendix A).

Success types. We observe from Table 6 that the groups nominate markedly different proportions of the 7 success types ($p<.001$). It could be argued that the college groups do not have different values, but rather that they see undergraduates in different settings. Comparisons of the

settings where the 5 groups know the students that they nominated do show significant differences among the groups ($p<.001$). Faculty are the only group who report that they know some (about 20%) of their success nominees only in formal, classroom settings. However, about 80% of the faculty nominees are seen in both formal and informal places. Students' nominees are also known primarily in formal and informal situations (60%) with about 40% known in informal settings only. Athletic coaches, and deans and masters report a mixture of settings whereas admissions staff nominate more students (about 60%) known in informal settings.

Even though settings may differ for the groups, we also know that the 7 success types are not merely different sides of the same students; they are basically different people, and display different characteristics before, during, and after Yale (Hackman & Taber, submitted for publication). We believe that substantially different value sets are displayed by the 5 groups in their nominations of students.

Undergraduates nominate and describe slightly more Grinds and slightly fewer Leaders than do the other five types, but the number of each type is essentially equal. It is likely that students are able to observe a wide range of student behavior in the community, and therefore can evaluate and identify more kinds of student performance. They are the only group to nominate a substantial number of Socializers, naming 48 of the total 52; it may be that Socializers are the only highly visible students in the community whom some students -- especially Freshmen and Sophomores -- know well.

Faculty, as expected, nominate predominantly the three "academic" types, Careerists, Scholars, and Grinds, in that order. The academic emphasis most likely reflects both the primary educational values of many

faculty, and the kind of behavior on which many faculty can most confidently evaluate students.

Athletic Coaches nominate Leaders and Athletes -- the two types highest in athletic achievement -- 4 out of 5 times. They nominate by far the largest proportion of athletes of any community group. Since coaches do not teach classes, their contact with students is almost exclusively through sports.

Deans and Masters most frequently name Leaders and Careerists, followed by Scholars.

Admissions Staff distribute their nominations across all but the Grind, but use half of their nominations for Leaders.

Nonsuccess types. The undergraduates nominated by fellow Students as unsuccessful are fairly evenly distributed across the five types. The same is true of the Athletic Coaches' nominees. In contrast, Faculty members place almost two-thirds of their nominees in the academically Unqualified group with much smaller proportions among the three types that are moderately high in academic performance. Over half of the faculty nominees are known only in formal classroom settings. (Distribution of settings where nominees are known by respondent groups is significant at $p<.001$.) Both the Deans and Masters and the Admissions Staff include relatively larger proportions in the Academically Alienated and the Personally Disliked types, and both include proportionately fewer in the Unqualified. Admissions people nominate no students in the Extreme Grind group and few in the Directionless.

Hypothesis IV. The dimensions and types of student performance that faculty members value differ significantly among academic departments classified according to Biglan's model.

Biglan (1973a, 1973b) and Smart and Elton (1975) have shown that academic departments differ in their departmental goals, task commitments, social connectedness, and scholarly output when classified according to Biglan's empirically derived model of academic subject areas. The model's 3 dimensions include: (1) the existence of a single paradigm (hard versus soft); (2) concern with living or organic objects of study (life systems versus nonlife systems); and (3) concern with practical application of subject matter (pure versus applied).

Our hypothesis proposes that the differences found among Biglan's academic clusters will extend to the values faculty hold about student success and failure. To test the hypothesis we have assigned the faculty respondents to 6 of Biglan's 8 cells. (None of the Yale College departments fit into Biglan's primarily agricultural Pure-Life-Applied or his educationally oriented Soft-Life-Applied cluster.) The departments represented in our analyses are described in the following chart.

Classification of Criteria Study Academic Departments
Using Biglan's 3-Dimensional Model

Task Area	Hard		Soft	
	Nonlife System	Life System	Nonlife System	Life System
Pure	Astronomy Chemistry Geology Mathematics Physics	Biology Molecular Biophysics & Biochemistry	American Studies Classics English Romance Lang. & Lit. History Music Philosophy Religious Studies Germanic Lang. & Lit. Near Eastern Lang. & Lit	Anthropology Political Sci. Psychology Sociology Linguistics
Applied	Engineering & Applied Sci. Computer Science Statistics		Administrative Sciences (Operations Res.) Economics	

To test this hypothesis, we will examine whether the 6 academic clusters differ on the following aspects of student evaluation:

--Real use of dimensions. Do the departmental groups differ in their descriptions of students whom they consider particularly successful? those considered unsuccessful?

--Ideal use of the dimensions. Do they differ in the ways they would ideally use the criterion dimensions to evaluate undergraduates, provided that they had enough information about all 21 dimensions of performance?

--Nomination of student types. Do the 6 clusters differ in the types of successful student behavior that they value? of unsuccessful student types?

Real use of dimensions. In their evaluations of successful students, the departmental groups differ significantly. They do not, however, have statistically significant differences in their unsuccessful student descriptions.

Two significant discriminant functions ($p<.001$, .05) were found for the success descriptions on the criterion dimensions, with the first function accounting for 60% of the variance. (See Table 8, Appendix A) Centroids of the 6 groups are presented in Fig. 4. Classification based on the discriminant functions is correct for 66.94% of the faculty members. The soft-nonlife-pure (humanities) and soft-life-pure (social science) faculty were most accurately classified, with the soft-nonlife-applied (primarily economics) and hard-nonlife-pure (physical sciences) faculty having the most misclassifications.

Discriminant functions permit parsimonious interpretations of dimensions underlying group differences (Tatsuoka, 1971). Although direct interpretations are not always possible, the nature of the dimension represented

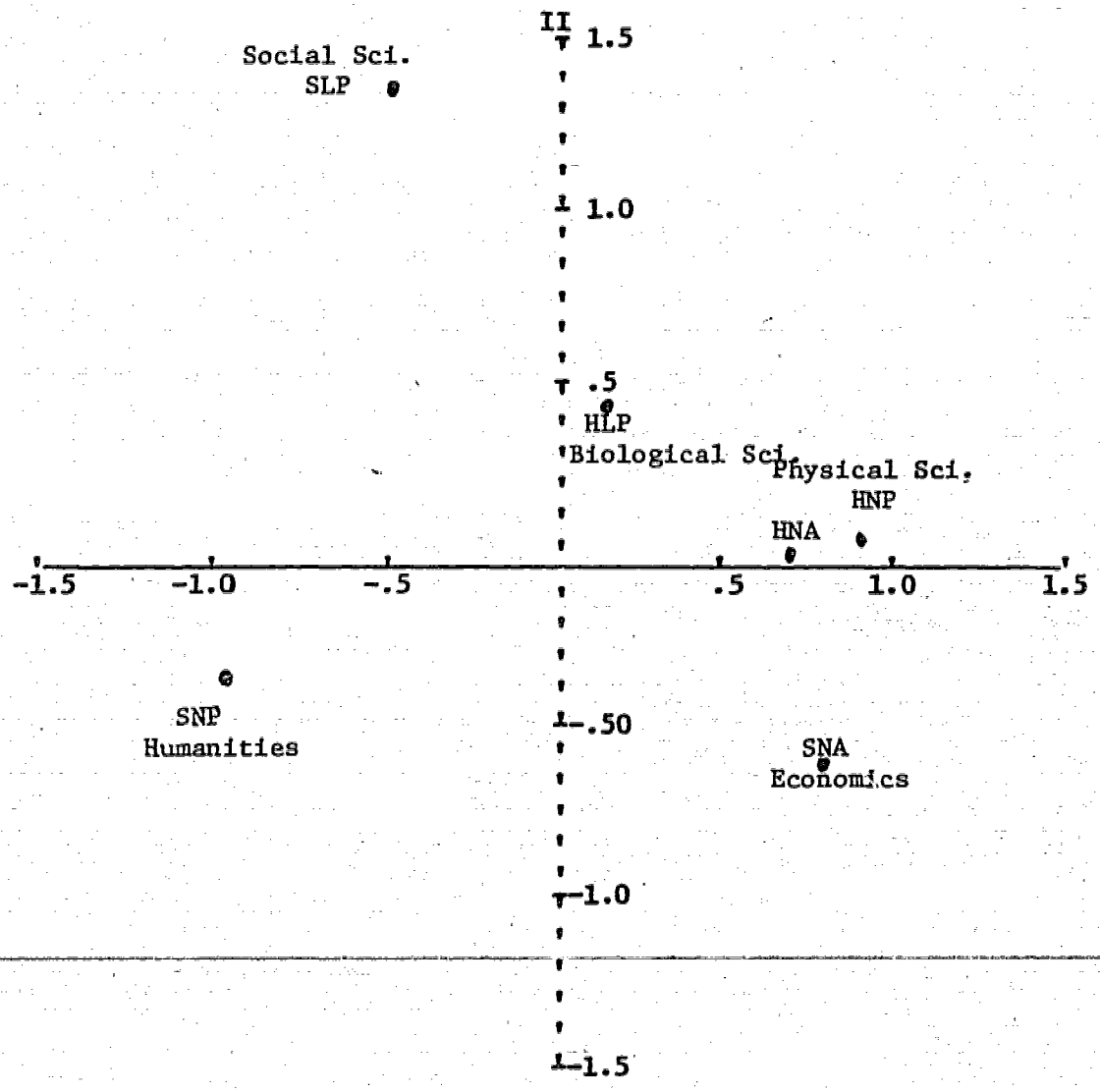


Figure 4

Centroids of Six Faculty Groups for Success Student Descriptions on Discriminant Functions I and II

by a discriminant function may be assessed from its standardized discriminant coefficients which indicate the relative contribution of each predictor variable. The largest coefficients for functions I and II are given in Table 8 and interpretation is supplemented by Table 9 (Appendix A) which reports F-tests on criterion dimension means for hard versus soft and life versus nonlife systems. It should be noted that although groups represented by positive centroids usually place a greater absolute emphasis on the predictor variables with large positive discriminant weights and vice versa, this does not always have to be the case. Therefore, it is helpful to look at average predictor scores when comparing the hard-soft and life-nonlife extremes of the two functions.

Biglan's hard-soft dimension clearly is represented by function I and his life-nonlife dimension by dimension II. We can see from Figure 4 that one cluster initially appears out-of-place. Biglan's empirical research classified economics departments in the soft-nonlife-applied cell whereas our SNA group (about 2/3 economics faculty and 1/3 operations researchers) is centered among the hard disciplines. This placement agrees with the neoclassical emphasis of the Yale College economics department which, unlike the other "soft" departments, follows a paradigm (i.e., has a commonly agreed upon set of problems for study and approved methods to be used in their exploration). The operations research faculty also fits the description.

With this interpretation of the SNA group as more hard than soft, we can see that function 1 clearly differentiates the soft disciplines--humanities and social sciences--from the hard areas. The students nominated by the hard faculty members are described as significantly higher ($p<.001$) in

Mathematical Proficiency. The humanities and social science faculty describe their success nominees as significantly higher ($p<.05$ or better) in Intellectual and Personal Growth, in Communication Proficiency and in Foreign Language Proficiency.

Function II differentiates the life and nonlife departments, with the social and biological scientists located on the positive end of the function. Examination of Figure 4 and Table 9 indicates that the life disciplines emphasize ($p<.05$ or better) Career Goals, Interpersonal Responsiveness, Persistence toward Graduation, and Congruence with the College. The nonlife departments' nominees are significantly higher ($p<.05$) in Artistic Performance and tend to be higher in Creative Performance.

Nomination of student types. As would be expected from their different uses of the real and ideal dimensions, the 6 departmental groups' descriptions of successful students fall into significantly different types ($p<.001$). The proportions of each of the 7 success types nominated by the faculty groups are shown in Table 12 (Appendix A). The social scientists name primarily Careerists and Scholars; they are the only group with no nominees classified as Grinds. The humanities faculty distribute their nominations mostly among Scholars, Artists, Grinds, and Leaders. Over half of the students described as successful by the economist-operations researchers and by the primarily engineering-and-applied-science group are Grinds or Careerists. The majority of physical scientists nominated Careerists whereas the biological scientists place major emphasis upon Scholars and Grinds.

Do the 6 departmental groups differ in their ideal use of the criterion dimensions? The soft and hard departments say that they would use the dimensions differently, if they had full information about a student they were evaluating. The different values that these two groupings place on the dimensions are shown in the one significant discriminant function found for evaluating successful students and again for evaluating nonsuccessful ones ($p<.05$). Results of the discriminant analyses are given in Table 10 and t-tests comparing the soft and hard disciplines are reported in Table 11 (in Appendix A). The placements of the 6 departmental clusters on function I in each analysis are shown in Figures 5 and 6. Over half of the variance is accounted for by each function I.

The soft and hard deparmental groups are divided in ideal use very much as they differ on descriptions of real students. Mathematical Proficiency and Creative Performance continue to be more highly regarded by the economists, physical scientists, biological scientists, and engineering & statistics faculty than by the humanities faculty and social scientists. These dimensions have the highest positive coefficients on function I , and univariate t-tests are significant at the $p<.001$ level. Although Athletic Performance is not considered very important for undergraduate evaluation by either grouping, the hard departments consider it significantly more important than do the soft faculty ($p<.05$). As it was for real use of the dimensions, Foreign Language Proficiency discriminates between the soft and hard faculty--even though neither group rates this skill particularly crucial. The soft faculty are higher in Foreign Language importance, in Communication Proficiency importance (writing and speaking skills), and they also consider Congruence with the College more important than the hard faculty do.

Figure 5

Centroids of Six Faculty Group for the
Ideal Use of Criterion Dimensions
in Evaluating Student Success

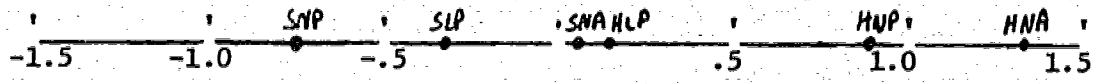


Figure 6

Centroids of Six Faculty Groups for the
Ideal Use of Criterion Dimensions
in Evaluating Student Nonsuccess

Hypothesis V. The dimensions and types of student performance that undergraduates value in their fellow students differ according to the undergraduates' sex, race, and class year.

Sex and race differences. Students participating in the College Criteria Study originally were selected from a stratification of sex, race, and class year. This makes it possible to compare the nominee descriptions of 6 sex-race groups: white men, white women, black men, black women, Spanish-American men, Spanish-American women. Results of multiple discriminant comparisons and univariate analyses of variance are reported in Tables 13, 14, and 15(in Appendix A). Locations of the group centroids are shown in Figures 7 and 8.

Two significant functions ($p<.001$, .10) were found for both the success and nonsuccess student descriptions of the 6 sex-race groups. The first success function accounts for 45% of the variance; the first nonsuccess function for 35%.

For both kinds of success descriptions, function I differentiates between the women and men respondents. (The exception is that the Spanish-American women's nonsuccess description centroid places with the men.) This clear difference between men and women in their evaluation of other students is reinforced by the results of univariate analyses. When success and nonsuccess descriptions are grouped together, women rate their nominees higher than do men on all of the 21 dimensions (13 of the 21 are statistically significant at $p<.05$ or better). Although the women's descriptions of successful nominees are slightly higher than those of men for Academic Effort & Achievement and Persistence toward Graduation, these two more traditional criteria of student performance have weights on the men's end of function I. This indicates that the men place relatively greater emphasis on these criteria than would be expected, given their emphases on the other dimensions.

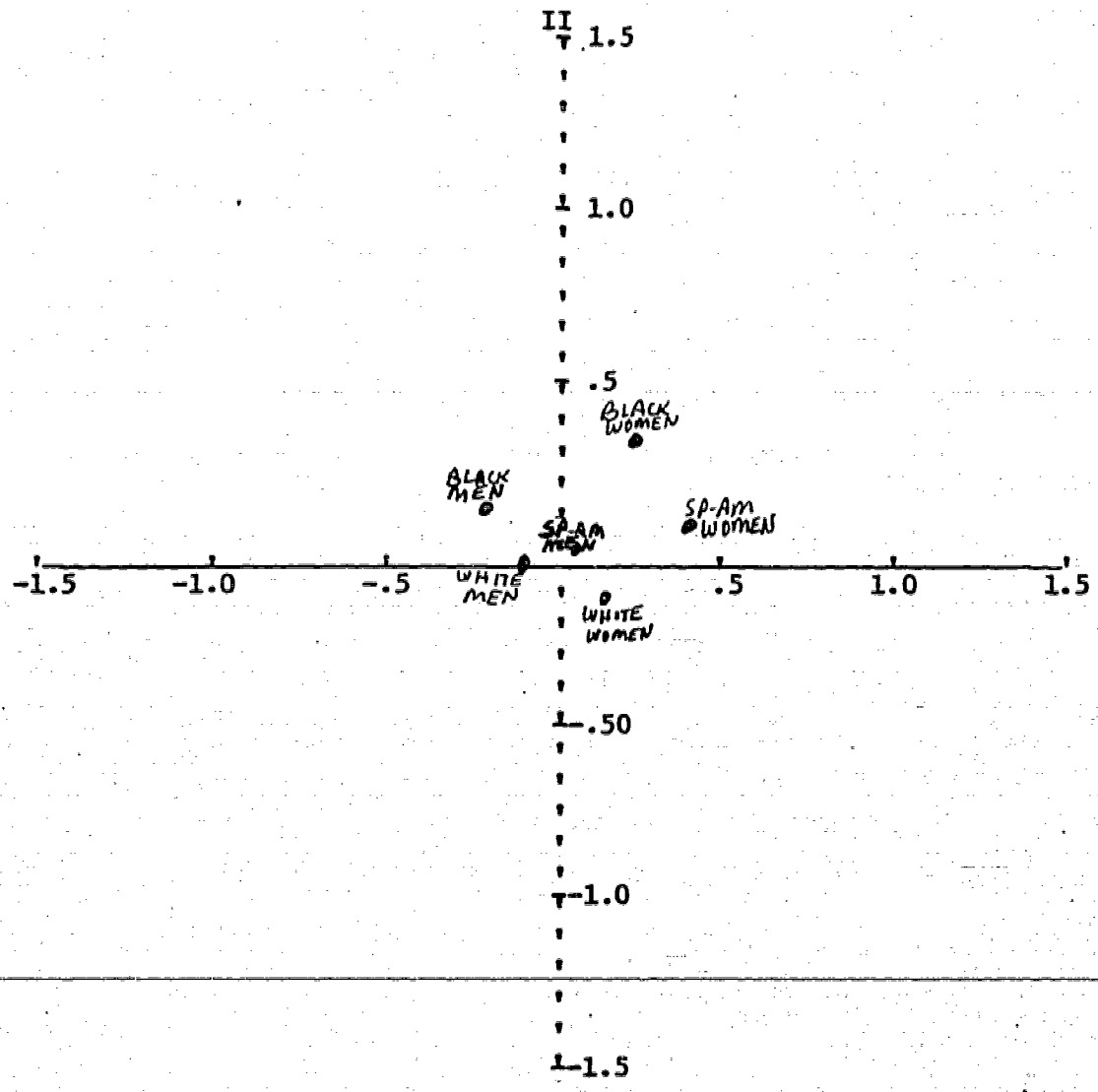


Figure 7

Centroids of Six Sex-Race Groups for
Success Student Descriptions on
Discriminant Functions I and II

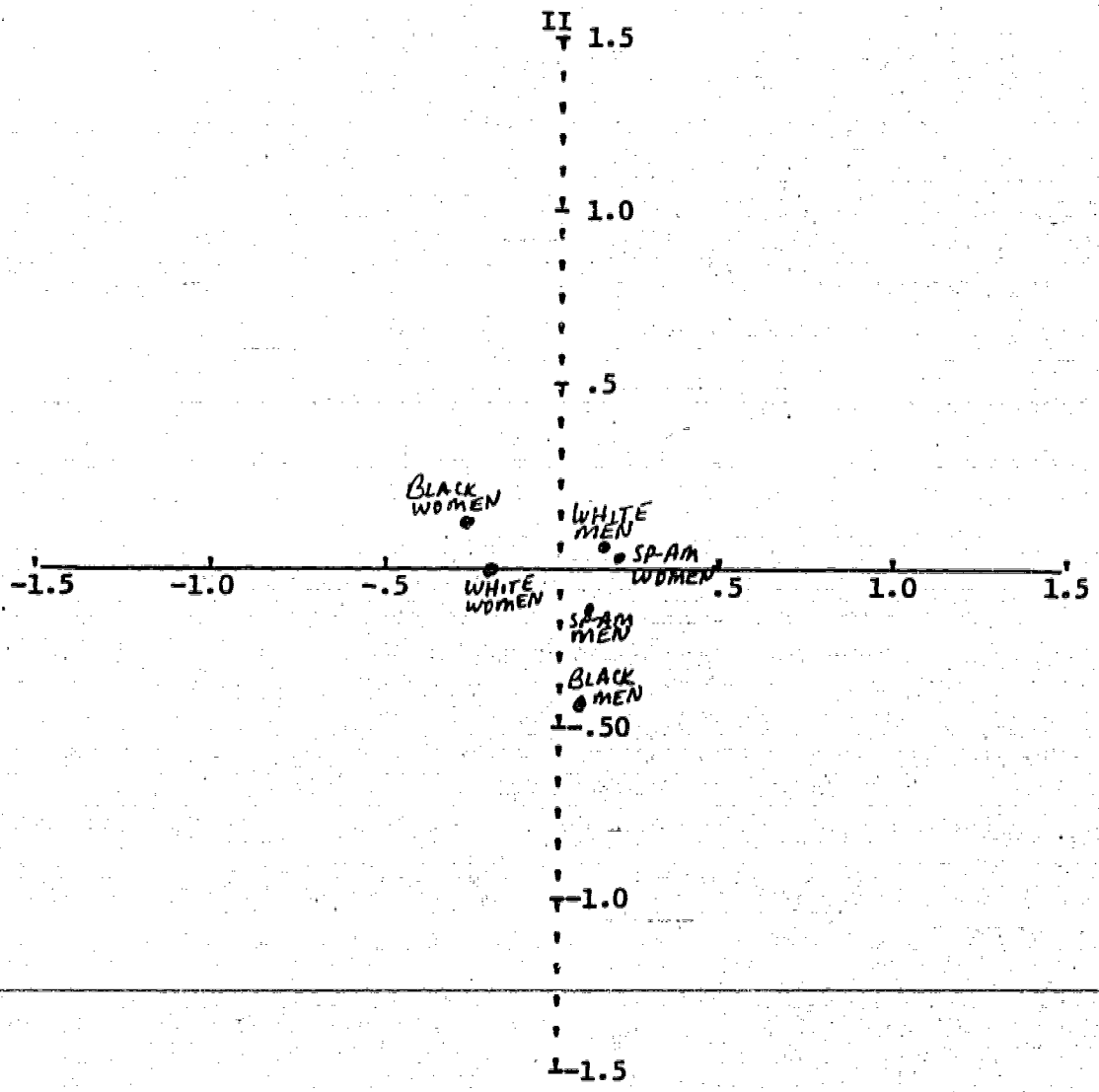


Figure 8

Centroids of Six Sex-Race Groups for Nonsuccess Student Descriptions on Discriminant Functions I and II

In evaluating the success or nonsuccess of other students, women differ from men in their relatively greater emphasis on a number of dimensions that are not primarily academic in nature. The women's end of the first function is characterized by Congruence with the College, the 4 interpersonal dimensions (Participation in Organizations, Interpersonal Sociability, Interpersonal Responsiveness, Discrimination Issues), Career Goals, and Optimistic, Emotionally Stable Behavior. This contrast is supported by the analyses of variance in Table 15.

Function II separates white and minority respondents for their success descriptions; and, for nonsuccess descriptions, sorts out the minority men from the rest. The one criterion dimension that consistently differs for whites and minorities is Congruence with the College. Minority students describe their successful nominees as significantly less congruent with Yale than do the whites, and their unsuccessful nominees as more congruent ($p<.001$). A similar pattern occurs for Optimistic, Emotionally Stable Behavior.

The 6 race-sex groups also differ in the types of students they describe as successful ($p<.01$), but not in their distribution of unsuccessful descriptions. The success type percentages are given in Table 16 (in Appendix A).

Class year and sex differences. We also divided the undergraduate respondents into 8 class year-sex groups and compared their descriptions of successful nominees and then of unsuccessful nominees. Two significant functions ($p<.001,.01$) were found for the success descriptions and one ($p<.001$) for the nonsuccess ones. (See Tables 17 and 18 for the multiple discriminant analysis results. Table 19 gives significance levels of univariate analyses of variance on the dimensions for sex by class year by success type, separately for white and minority students.)

The relationships among the 8 class year-sex groups can be seen in Figures 9 and 10. Function I discriminates between the men and women, with the men falling on the negative end and the women placed positively. Only the freshman women are positioned slightly within the men's "territory." As we noted in the discussion

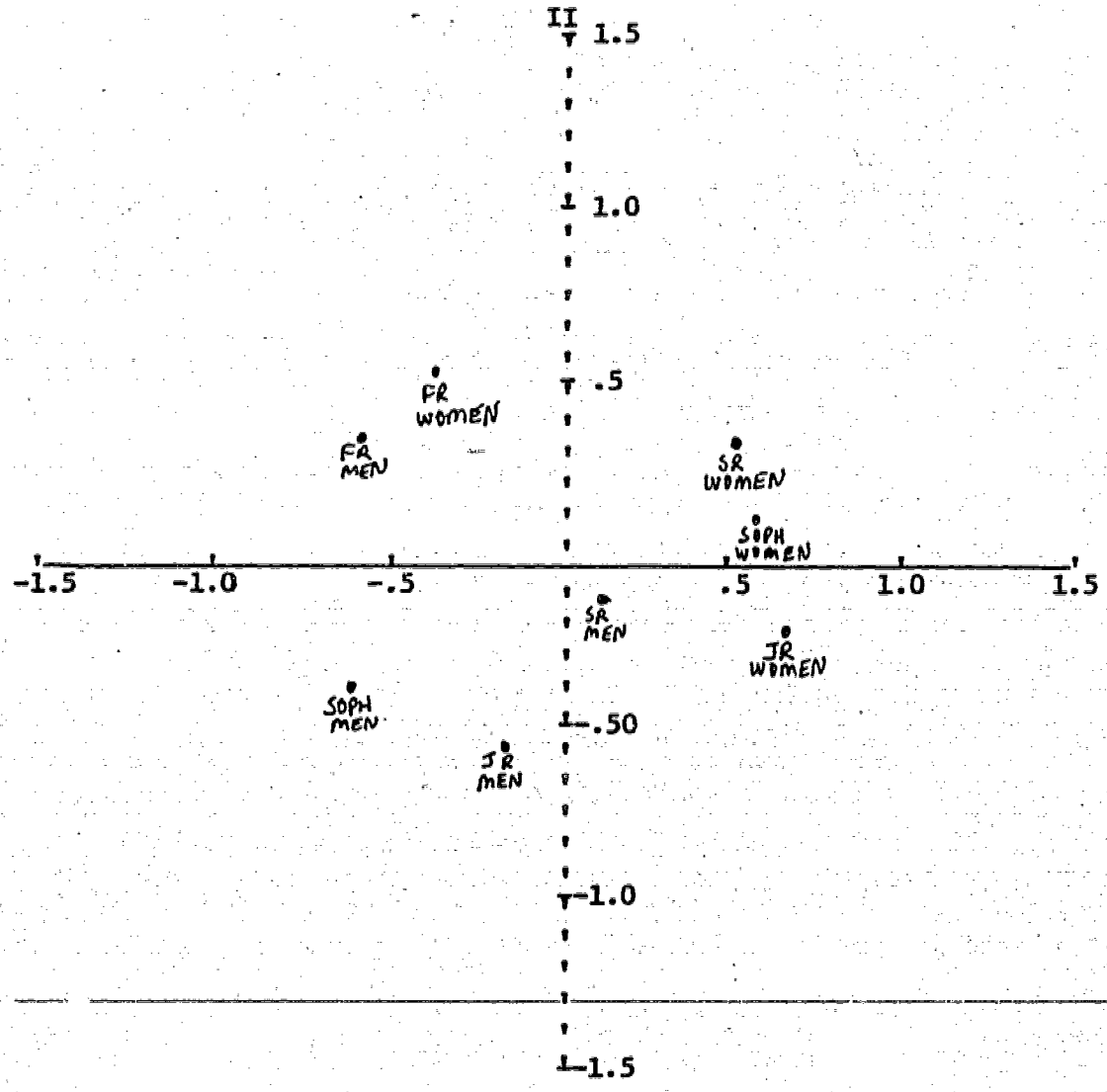


Figure 9

Centroids of Eight Sex-Class Year Groups for Success Student Descriptions on Discriminant Functions I and II

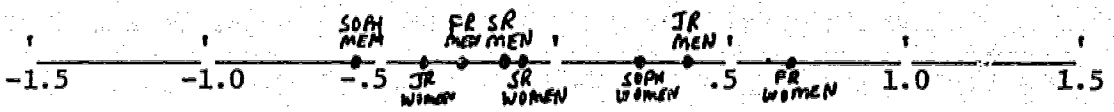


Figure 10

Centroids of Eight Sex-Class Year Group for Nonsuccess Student Descriptions on Discriminant Function I

of respondents' differences along sex and race lines, it is particularly difficult to interpret the underlying meaning of the sex function I because women rate their nominees consistently higher than the men. The pattern of function II is less apparent than that of the first success function. It does not represent a clear progression across class years; however, the two freshman groups do separate out together on both functions indicating that function II may pertain to socialization or involvement in the Yale scene. Because the upperclasswomen in our study were among the first women's classes in Yale College, they would not be expected to resemble their "fellow" classmates in a systematic way. However, the men and women centroids are ordered in a parallel way on function II: juniors lowest, then sophomores, seniors, and freshmen highest.

Only the first discriminant function is significant ($p < .001$) for these groups' description of their nonsuccess nominees. Interpretation of this function is unclear.

The univariate analyses reveal 2 dimensions that have significant interactions among the students when grouped by class year, sex, and type of success being described. These findings indicate that, for men, both Academic Effort and Achievement and Career Goals become increasingly important during their college years. There is a much wider gap between the success and nonsuccess of freshmen's nominees on these dimensions than for seniors. Women describe their nominees as considerably high than the men's on Career Goals from the freshman year on up. Their ratings also suggest an increase in the importance of Career Goals during college; but Academic Effort & Achievement does not make as drastic a change.

As might be expected from our other findings, the 8 class year-sex groups differ significantly ($p < .001$) in proportions of student success types that they describe. These percentages are given in Table 20. The women consistently name larger proportions of Scholars and Careerists than do the men. Men name greater proportions of students classified as Artists and Athletes.

Hypothesis VI. An analysis of a college's multiple evaluating environments can provide a profile of the college's central values and can clarify the many forces affecting and educating its students.

We have already reported data to support this hypothesis in early Results and Discussion sections. The content of the profile that emerges from the previous hypotheses will be revied in the following Summary and Conclusions.

Summary and Conclusions

In this paper we have proposed that multiple evaluating environments exist within organizations and have stressed the importance of their impact in organizations where the primary products are people. The purpose of the paper has been to demonstrate the existence of multiple evaluating environments in an educational organization--Yale College--and then to draw a profile of this college based on the analysis. Six hypotheses have been examined with the following results:

Hypothesis I. A college's evaluating environment uses multiple criteria. We have shown that the criteria use by the college community studied (Yale College) can be described by 21 comprehensive dimensions of student performance. These dimensions are grouped into five areas of college life--general academic, specific academic, personal, interpersonal, and institutional. They have been developed from the College Criteria Questionnaire on which members of the Yale College community (students, faculty, deans and masters, admissions staff, and athletic coaches) described 2 "most successful" and 2 "least successful" students.

Hypothesis II. The predominant types of student success and failure in a college's evaluating environment are varied in content although relatively few in number. Using the 21 dimensions as input, we have identified 7 patterns of student success and 5 patterns of nonsuccess that are prevalent within the college community studied. These patterns are useful in describing a college and the different types of student performance valued in its various parts.

Hypothesis III. Faculty, student, administrative, admissions, and athletic groups within a college evaluate student performance differently. We described how these groups differed in the information available, in their real use of the 21 criterion dimensions to evaluate successful and nonsuccessful undergraduates, in the ways they say they would ideally use the dimensions, and in the types of real student they nominated for success and nonsuccess. In describing

students whom they consider successful, faculty and students appear to agree more with each other than with the admissions, administrative, or athletic groups. The latter 3 evaluating environments within the college place more emphasis on nonacademic dimensions of success than do the faculty or students. We also looked at how the 5 groups would ideally use the dimensions, given that they had sufficient information about a student. Although many dimensions were accorded similar importance for ideal use as for real use, there were considerable discrepancies for others. The groups also differed signifiantly in the types of students they valued. Undergraduates spread their nominations across the 7 types of success and 5 types of nonsuccess identified in the study. Faculty emphasized the 3 academically oriented success types and placed almost two-thirds of their nonsuccess nominees in the academically Unqualified pattern. The athletic coaches mostly name the two types with athletic achievement for success.

Hypothesis IV. The dimensions and types of student performance that faculty members value differ significantly among academic departments classified according to Biglan's model. We found that Biglan's model extends to analyses of the evaluating environments within a college faculty in terms of their descriptions of real students considered particularly successful and in terms of ideal values. There were no differences, however, among his groupings for nonsuccess descriptions. Once we assigned the economics and operations research faculty to the hard side of his paradigm dimension, our departmental groups clearly fell into hard-soft departments and life-nonlife distinctions. A hard-soft factor also appears for the faculty members' reports of how they would ideally use the dimensions. And, the 6 group nominate significantly different types of students as successful.

Hypothesis V. The dimensions and types of student performance that undergraduates value in their fellow students differ according to the undergraduates' sex, race, and class year. Although we found significant differences on student success and nonsuccess descriptions for 6 sex-race groups, the primary difference between the white and minority students was the whites' greater value of Congruence

with Yale and Optimistic, Emotionally Stable Behavior. The women tend to give more positive evaluations in general and emphasize nonacademic dimensions of student performance more than the men who give more weight to 2 of the traditional college measures--Academic Effort & Achievement (including grades) and Persistence toward Graduation. The differences that we found among the values that students from different class years hold suggest variations based on their commitment or involvement to the college. Freshmen and seniors are similar in some ways because of their stance as more peripheral members of the student body--either moving in or out and not quite a central part. As might be expected, men and women name significantly different proportions of the 7 success types, with women's nominees classified more often as Scholars and Careerists and men's more often as Artists and Athletes. They are similar in their distributions of the other types--Leaders, Grinds, and Socializers.

Hypothesis VI. An analysis of a college's multiple evaluating environments can provide a profile of the college's central values and can clarify the many forces affecting and educating its students. A major theme that reappears throughout our analyses is that those students considered particularly successful by Yale's evaluating environments are the ones who deal well with the college's complexity. Given a multitude of opportunities and choices, they select resources, activities, and associates of interest, integrate these into coherent wholes, and thus create personal paths of development through the Yale College experience. Successful paths can lie in a number of directions--leadership, scholarship, artistic excellence, athletic achievement, social performance, career orientation, or academic orientation. Whatever the goal, successful performance is consistently characterized by the student's self-directedness. Both in describing real students and in rating the ideal importance of the different performance dimensions, self-directed behavior appears high on the list. In contrast, those students described as particularly unsuccessful are either very narrowly academic, or lack self-direction and congruence with the college. They all have difficulty dealing with

the complexity of the college's many evaluating environments.

Applications and further research. The institutional profile which has been drawn by examining evaluating environments within a college offers an organizational analysis that differs from other environmental measures (see Baird, 1974) and from other student typologies (see Feldman & Newcomb, 1970; Walsh,1974).

The dimensions of college performance identified in the College Criteria Study appear to be generalizable to other college environments, with possible additions or deletions of some categories in the College Criteria Questionnaire. Some of the types that we derived resemble those found in other student typologies, and would undoubtedly reappear on other college campuses. However, the particular configuration of types would very likely differ from one campus to another. In fact, the typologies can provide a useful picture of the values prevalent in a particular college community.

The knowledge gained from such a college profile is helpful as an organizational description. In addition, profiles could be compared among colleges to examine institutional similarities and differences. But perhaps more important, an understanding of the goals central to an entire community and knowledge of the multiple goals held by different evaluating environments are invaluable information for organizational development efforts within an institution. As Biglan suggests in his comparisons of differences among (1973a,1973b) academic fields, the heterogeneity among departments must be acknowledged in making policy, or in creating change. The heterogeneity that exists beyond departmental, faculty boundaries also must be acknowledged. And, at the same time, we must seek and find the common bonds that hold a college or university together.

Table 1

Percentages of Dimension Use:
College Groups by Type of Success

Criterion Dimensions	Students		Faculty		Athletics		Deans&Masters		Admissions		All Respondents		
	Success	Non Success	Success	Non Success	Success	Non Success	Success	Non Success	Success	Non Success	Success	Non Success	All
	%	%	%	%	%	%	%	%	%	%	%	%	
General Academic Dimensions													
Intellectual Growth	76	79	68	58	90	75	78	69	69	53	74	72	73
Cognitive Proficiency	86	79	81	72	70	41	76	58	69	43	83	73	78
Communication Proficiency	89	80	95	84	87	59	86	73	84	77	90	80	85
Intellectual Perspective and Curiosity	90	83	88	70	93	59	84	69	85	55	89	77	83
Creative Performance	88	80	98	86	90	63	81	61	69	47	89	79	84
Academic Effort and Achievement	92	87	94	86	86	62	91	84	80	60	92	85	88
Self-Directed Behavior	92	84	90	79	95	63	89	75	88	67	91	81	86
Career Goals	96	89	94	70	95	60	94	86	90	71	95	83	89
Specific Academic Dimensions													
Mathematical Proficiency	74	73	69	47	21	06	53	37	38	13	67	60	64
Foreign Language Proficiency	79	65	38	27	37	19	37	37	56	27	64	50	57
Artistic Performance	85	81	40	23	63	31	65	42	69	47	71	62	67
Personal Dimensions													
Personal Growth	69	80	56	46	90	94	78	69	75	73	67	71	69
Optimistic, Emotionally Stable Behavior	97	94	86	77	98	92	91	89	91	84	93	89	91
Ethical Behavior	92	85	75	59	97	80	92	75	92	77	88	78	83
Athletic Performance	86	83	34	25	97	97	75	55	72	53	72	67	70
Interpersonal Dimensions													
Participation in Organizations	91	86	59	38	96	67	87	74	91	81	83	73	78
Interpersonal Sociability	97	97	76	60	100	98	92	90	85	82	91	87	89
Interpersonal Responsiveness	93	89	70	50	98	75	86	75	88	76	87	78	82
Discrimination Issues Behavior	85	78	39	22	87	66	79	50	81	47	73	61	67
Institutional Dimensions													
Congruence with the College	97	94	89	76	100	88	93	86	94	89	95	89	92
Persistence toward Graduation	97	96	92	78	100	100	93	93	94	87	95	91	94

Table 2

Multiple Discriminant Analysis of Success Student Descriptions by Five College Groups
(Faculty, Students, Athletics, Deans and Masters, Admissions)

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks Lamda	Chi-Square	df
				0	.5374	313.020***	84
1	.35252	50.46	.511	1	.7268	160.828***	60
2	.22806	32.64	.431	2	.8926	57.290*	38
3	.09284	13.29	.291	3	.9754	12.545	18
4	.02520	3.61	.157				

***=p.001
*=p.05

Largest Standardized Discriminant Function Coefficients for Functions I & II

	Function I		Function II	
sitive	Participation in Organizations	+.15	Self-Directed Behavior	+.13
	Ethical Behavior	+.14		
	Athletic Performance	+.13		
	Personal Growth	+.13		
	Discrimination Issues Behavior	+.12		
gative	Cognitive Proficiency	-.18	Academic Effort & Achievement	-.23
	Interpersonal Responsiveness	-.14	Persistence Toward Graduation	-.16

Table 3

Multiple Discriminant Analysis of Nonsuccess Student Descriptions by Five College Groups
(Faculty, Students, Athletics, Deans and Masters, Admissions)

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks Lambda	Chi-Square	df
				0	.4503	361.464***	84
1	.76220	75.95	.658	1	.7934	104.812***	60
2	.11058	11.02	.316	2	.8812	57.299*	38
3	.08110	8.08	.274	3	.9526	21.976	18
4	.04971	4.95	.218				

***=p.001
*=p.05

Largest Standardized Discriminant Function Coefficients for Functions I & II

	Function I		Function II	
itive	Interpersonal Sociability	+.19	Congruence with the College	+.15
	Cognitive Proficiency	+.16	Career Goals	+.14
			Discrimination Issues Behavior	+.11
			Intellectual Growth	+.10
ative	Participation in Organizations	-.22	Academic Effort & Achievement	-.17
	Artistic Performance	-.13	Personal Development	-.16
			Interpersonal Sociability	-.14
			Persistence toward Graduation	-.11
			Ethical Behavior	-.11

Table 4

Relative Importance of the Dimensions for the Five College Groups: Correlations of Dimensions with Type of Success and Rank Order for Groups

Criterion Dimensions	Students		Faculty		Athletics		Deans&Masters		Admissions		All Respondents	
	r	rank	r	rank	r	rank	r	rank	r	rank	r	rank
Academic General Dimensions												
Intellectual Growth	.65	7	.68	9	.75	6	.67	14	.65	14½	.66	8
Cognitive Proficiency	.64	8½	.83	2½	.53	15	.70	12	.68	13	.68	6
Communication Proficiency	.64	8½	.73	7	.51	16	.74	10	.65	14½	.66	8
Intellectual Perspective and Curiosity	.68	3½	.78	5	.67	12	.76	8	.86	3	.71	4½
Creative Performance	.60	11½	.78	5	.58	13	.68	13	.41	17	.64	10
Academic Effort and Achievement	.68	3½	.85	1	.76	4	.80	4	.84	4	.74	2
Self-Directed Behavior	.67	5	.78	5	.74	8½	.81	3	.76	9	.71	4½
Career Goals	.58	14	.66	10	.57	14	.62	16	.73	11	.61	11½
Academic Specific Dimensions												
Mathematical Proficiency	.29	19	.51	15	.29	18	.34	19	.15	21	.35	18
Foreign Language Proficiency	.26	20	.27	17	.20	21	.30	21	.37	19½	.26	20
Artistic Performance	.44	16	.21	19	.27	19½	.33	20	.38	18	.38	17
Nonacademic Personal Dimensions												
Personal Growth	.59	13	.56	13½	.75	6	.73	11	.73	11	.60	13½
Emotionally Stable Behavior	.72	2	.72	8	.80	2	.85	2	.87	2	.73	3
Ethical Code Behavior	.55	15	.60	11	.73	10	.76	9	.77	8	.59	15
Athletic Performance	.16	21	.06	21	.69	11	.50	18	.37	19½	.17	21
Nonacademic Interpersonal Dimensions												
Participation in Organizations	.63	10	.44	16	.82	1	.77	7	.82	6	.60	13½
Interpersonal Sociability	.60	11½	.56	13½	.75	6	.79	5	.83	5	.61	11½
Interpersonal Responsiveness	.66	6	.59	12	.74	8½	.78	6	.81	7	.66	8
Discrimination Issues Behavior	.42	17	.13	20	.27	19½	.65	15	.73	11	.39	16
Institutional Dimensions												
Congruence with the College	.79	1	.83	2½	.78	3	.85	1	.90	1	.80	1
Persistence toward Graduation	.33	18	.23	18	.32	17	.55	17	.56	16	.33	19

Table 5

Rankings of 21 Criterion Dimensions for Importance in "Real Use" and Importance in "Ideal Use"

Dimensions	"Real Use" Ranking	"Ideal Use" Ranking		
		Success	Non Success	Average Rank
General Academic Dimensions				
Intellectual Growth	8	2	2	1.5
Cognitive Proficiency	6	8	12	11
Communication Proficiency	8	4	5	4
Intellectual Perspective and Curiosity	4.5	5	9	7
Creative Performance	10	1	8	4
Academic Effort & Achievement	2	9	10.5	10
Self-Directed Behavior	4.5	3	1	1.5
Career Goals	11.5	14	14	14
Specific Academic Dimensions				
Mathematical Proficiency	18	19	19	19
Foreign Language Proficiency	20	20	20	20
Artistic Performance	17	16	18	17
Personal Dimensions				
Personal Growth	13.5	6	3	4
Optimistic, Emotionally Stable Behavior	3	11	7	9
Ethical Code Behavior	15	7	4	6
Athletic Performance	21	21	21	21
Interpersonal Dimensions				
Participation in Organizations	13.5	15	15	15
Interpersonal Sociability	11.5	12	10.5	12
Interpersonal Responsiveness	8	13	13	13
Discrimination Issues Behavior	16	18	17	18
Institutional Dimensions				
Congruence with the College	1	10	6	8
Persistence toward Graduation	19	17	16	16

"Real Use" rankings are based on ordering the correlations of dimension ratings and success type for the real students nominated in the study.

"Ideal Use" rankings are based on the ordering of importance ratings in answer to two questions: "How much would you use the category to differentiate 'Most Successful' undergraduates from other students?" and "How much would you use the category to differentiate 'Least Successful' undergraduates?"

Table 6

College Groups: Percentages of Nominees in Each Success Type

	Leader %	Scholar %	Grind %	Artist %	Athlete %	Careerist %	Socializer %	Total %
Students (n=320)	9.7	13.4	16.6	14.7	15.6	15.0	15.0	100.0
Faculty (n=128)	6.3	23.4	19.5	14.8	7.0	27.4	1.6	100.0
Athletics (n=19)	47.3	5.3	0.0	5.3	36.8	5.3	0.0	100.0
Deans and Masters (n=35)	40.0	17.1	2.9	0.0	8.6	31.4	0.0	100.0
Admissions (n=16)	50.0	12.5	0.0	12.5	6.3	6.3	12.5	100.0
Total %	13.5	15.8	15.3	13.3	13.5	18.5	10.0	100.0
n	70	82	79	69	70	96	52	518

Chi square = 133.10
p=<.001

Table 7

College Groups: Percentages of Nominees in Each Nonsuccess Type

Group	Disliked %	Extreme Grind %	Alienated %	Unqualified %	Directionless %	Total %
Students (n=295)	19.3	20.0	22.4	18.6	19.7	100.0
Faculty (n=112)	5.4	8.9	8.9	64.3	12.5	100.0
Athletics (n=16)	25.0	25.0	18.8	18.8	12.5	100.0
Deans and Masters (n=29)	24.1	17.2	37.9	6.9	13.8	100.0
Admissions (n=15)	33.3	0.0	46.7	13.3	6.7	100.0
Total n	79	78	94	134	79	467
%	16.9	16.7	20.8	28.7		100.0

Chi square = 110.12
p=<.001

Table 8

Multiple Discriminant Analysis of Success Student Descriptions by Sity Departmental Groups

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks Lambda	Chi-Square	df
				0	.1330	214.832***	105
1	1.76725	59.96	.799	1	.3681	106.431*	80
2	.58412	19.82	.607	2	.5831	57.438	57
3	.25305	8.59	.449	3	.7307	33.413	36
4	.23296	7.90	.435	4	.9009	11.110	17
5	.10995	3.73	.315				

***=p.001
*=p.05

Largest Standardized Discriminant Function Coefficients for First Two Functions

	Function 1		Function 2	
Positive	Mathematical Proficiency	+.68	Career Goals	+.53
	Discrimination Issue Behavior	+.26	Interpersonal Responsiveness	+.42
	Creative Performance	+.23	Cognitive Proficiency	+.25
	Self-Directed Behavior	+.19	Persistence toward Graduation	+.25
	Intellectual Perspective and Curiosity	+.18	Athletic Performance	+.23
	Athletic Performance	+.14	Congruence with the College	+.20
	Academic Effort and Achievement	+.12	Interpersonal Sociability	+.18
	Optimistic, Emotionally Stable Behavior	+.11	Foreign Language Proficiency	+.16
			Ethical Behavior	+.10
			Participation in Organizations	+.10
			Intellectual Perspective & Cur.	+.25
Negative	Foreign Language Proficiency	-.41	Creative Performance	-.67
	Cognitive Proficiency	-.40	Discrimination Issues Behavior	-.44
	Intellectual Growth	-.21	Optimistic, Emotionally Stable Behavior	-.34
	Interpersonal Responsiveness	-.17	Artistic Performance	-.33
	Communication Proficiency	-.17	Intellectual Growth	-.23
	Participation in Organizations	-.15	Self-Directed Behavior	-.19
	Ethical Behavior	-.14	Communication Proficiency	-.18

Table 9

Real Use of Criterion Dimensions for Success Student Descriptions: Means and t-Tests for Soft versus Hard and Nonlife versus Life Departments

	Soft $\bar{X}$ n=53	Hard $\bar{X}$ n=68	F-Value	Nonlife $\bar{X}$ n=91	Life $\bar{X}$ n=30	F-Value	Inter-Action F-Value
General Academic Dimensions							
Intellectual Growth	5.70	5.20	7.23**	5.38	5.55	.54	.24
Cognitive Proficiency	6.09	5.91	1.79	5.96	6.06	.37	.01
Communication Proficiency	5.66	5.26	6.01*	5.46	5.36	.35	.56
Intellectual Perspective and Curiosity	5.78	5.61	1.41	5.63	5.86	1.88	.59
Creative Performance	5.76	5.76	.00	5.83	5.53	1.92	.05
Academic Effort and Achievement	5.97	5.93	.0[illegible]	5.88	6.15	3.18	1.16
Self-Directed Behavior	5.93	5.88	.1[illegible]	5.90	5.89	.01	.63
Career Goals	5.54	5.77	1.88	5.54	6.08	6.70*	.39
Specific Academic Dimensions							
Mathematical Proficiency	4.57	5.86	58.78***	5.31	5.23	.03	2.12
Foreign Language Proficiency	4.85	4.23	16.40***	4.48	4.56	.12	2.10
Artistic Performance	4.77	4.51	2.99	4.73	4.31	5.87*	8.80**
Personal Dimensions							
Personal Growth	5.12	4.65	6.86**	4.77	5.11	2.51	6.48*
Optimistic, Emotionally Stable Behavior	5.45	5.50	.12	5.44	5.56	.47	.50
Ethical Behavior	5.72	5.58	.99	5.58	5.84	.07	.01
Athletic Performance	3.70	3.86	1.27	3.77	3.86	.32	2.62
Interpersonal Dimensions							
Participation in Organizations	5.45	5.50	.38	4.48	4.59	.39	2.14
Interpersonal Sociability	4.56	4.47	1.59	5.22	5.45	1.19	.18
Interpersonal Responsiveness	5.41	5.18	1.77	5.03	5.48	7.75**	.57
Discrimination Issues Behavior	5.25	5.05	1.50	4.47	4.56	.44	5.43*
Institutional Dimensions							
Congruence with the College	5.92	5.73	1.86	5.72	6.08	5.48*	.48
Persistence toward Graduation	5.98	6.00	.02	5.88	6.33	5.47*	.08

***p=<.00.
**p=<.01
*p=<.05

Table 10

Multiple Discriminant Analyses of Ideal Criterion Dimension Use by Six Faculty Departmental Groups[1]

	Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlations	Functions Derived	Wilks Lambda	Chi-Square	df
For Evaluating Student Success[2]					0	.2333	134.637*	105
	1	1.04775	55.93	.715	1	.4777	68.339	80
	2	.35834	19.13	.514	2	.6489	40.010	57
	3	.21044	11.23	.417	3	.7854	22.343	36
	4	.14088	7.52	.351	4	.8961	10.152	17
	5	.11600	6.19	.322				
For Evaluating Student Nonsuccess[3]					0	.2253	137.742*	105
	1	1.18967	59.57	.737	1	.4932	65.375	80
	2	.45541	22.80	.559	2	.7179	30.661	57
	3	.15090	7.56	.362	3	.8262	17.661	36
	4	.13095	6.56	.340	4	.9344	6.278	17
	5	.07023	3.52	.256				

*=p≤.05

Largest Standardized Discriminant Function Coefficients for Function I

	Function I--Evaluating Success[2]		Function I --Evaluating Nonsuccess[3]	
Negative	Congruence with the College	-.34	Intellectual Perspective & Curiosity	-.42
	Artistic Performance	-.28	Congruence with the College	-.41
	Cognitive Proficiency	-.20	Personal Growth	-.38
	Communication Proficiency	-.17	Foreign Language Proficiency	-.31
	Foreign Language Proficiency	-.26	Artistic Performance	-.18
Positive	Mathematical Proficiency	+.52	Creative Performance	+.70
	Creative Performance	+.70	Mathematical Proficiency	+.57
	Athletic Performance	+.23	Academic Effort & Achievement	+.26
	Career Goals	+.32	Participation in Organizations	+.30
	Interpersonal Sociability	+.23	Athletic Performance	+.21
	Persistence toward Graduation	+.34	Persistence toward Graduation	+.23

[1]The six groups are:
Soft-Nonlife-Pure (Humanities)
Soft-Life-Pure (Social Sciences)
Soft-Nonlife-Applied(Economics & Operations Research)
Hard-Nonlife-Pure (Physical Sciences)
Hard-Life-Pure (Biological Sciences)
Hard-Nonlife-Applied(Engineering & Applied Sciences, Computer Science, Statistics)

[2]Ratings on dimensions in response to question: "How much would you use the category to differentiate 'Most Successful' undergraduates from other students?"

[3]Ratings on dimensions in response to question: "How much would you use the category to differentiate 'Least Successful' undergraduates?"
The signs of the coefficients have been reversed here and in Figure 6 to parallel the Ideal Success and Real Use ratings.

Table 11

t-Tests Comparing Ideal Use of Criterion Dimensions by Soft and Hard Department Faculty

Criterion Dimensions	For Evaluating Student Success[1]			For Evaluating Student Nonsucces		
	Soft	Hard		Soft	Hard	
	$\bar{X}$	$\bar{X}$	t-Value	$\bar{X}$	$\bar{X}$	t-Value
General Academic Dimensions						
Intellectual Growth	4.16	4.02	0.76	4.10	3.84	1.34
Cognitive Proficiency	3.79	3.83	-0.34	3.40	3.41	-0.06
Communication Proficiency	4.15	3.80	2.47*	3.84	3.57	1.81
Intellectual Persp. & Curiosity	4.15	4.13	0.12	3.78	3.61	1.21
Creative Performance	4.28	4.56	-1.87	3.64	3.81	-0.77
Academic Effort & Achievement	3.91	3.86	0.46	3.61	3.53	0.60
Self-Directed Behavior	3.83	3.94	-0.72	3.55	3.64	-0.66
Career Goals	3.21	3.49	-1.69	3.07	3.09	-0.13
Specific Academic Dimensions						
Mathematical Proficiency	2.54	3.49	-4.66***	2.30	3.05	-3.47***
Foreign Language Proficiency	3.08	2.28	3.61***	2.52	2.05	2.23*
Artistic Performance	2.53	2.22	1.50	2.26	2.08	0.97
Personal Dimensions						
Personal Growth	3.66	3.42	1.18	3.72	3.23	2.32*
Optimistic, Emotionally Stable	2.93	3.06	-0.91	3.05	3.04	0.09
Ethical Behavior	3.71	3.63	-0.44	3.63	3.45	0.95
Athletic Performance	1.49	1.83	-2.33*	1.53	1.85	-2.14*
Interpersonal Dimensions						
Participation in Organizations	2.43	2.56	-1.10	2.49	2.60	-0.84
Interpersonal Sociability	2.69	2.81	-0.85	2.77	2.80	-0.24
Interpersonal Responsiveness	2.99	2.98	0.04	2.99	2.93	0.04
Discrimination Issues Behavior	2.19	2.07	0.72	2.10	2.07	0.19
Institutional Dimensions						
Congruence with the College	3.23	3.00	1.51	3.37	3.10	1.73
Persistence toward Graduation	2.44	2.50	-0.23	2.64	2.72	-0.27

[1] Ratings on dimensions in response to question: "How much would you use the category to differentiate 'Most Successful' undergraduates from other students?"

[2] Ratings on dimensions in response to question: "How much would you use the category to differentiate 'Least Successful' undergraduates?"

***=p<.001
*=p<.05

Table 12

Six Departmental Groups: Percentages of Nominees in Each Success Type

	Leader	Scholar	Grind	Artist	Athlete	Careerist	Socializer	Total
Soft-Nonlife-Pure (Humanities) (n=39)	15.4	35.9	17.9	17.9	5.1	7.7	0.0	100.0%
Soft-Life-Pure (Social Sciences) (n=14)	7.1	35.7	0.0	7.1	7.1	42.9	0.0	100.0%
Soft-Nonlife-Applied (Economics & Operations Research) (n=16)	0.0	18.8	37.5	0.0	18.3	25.0	0.0	100.0%
Hard-Nonlife-Pure (Physical Sciences) (n=21)	0.0	0.0	9.5	23.8	9.5	52.4	4.8	100.0%
Hard-Life-Pure (Biological Sciences) (n=16)	0.0	43.8	31.3	6.3	6.3	12.5	0.0	100.0%
Hard-Nonlife-Applied (Engineering, Statistics, Computer Science) (n=15)	0.0	6.7	33.3	20.0	0.0	33.3	6.7	100.0%
Total %	5.8	24.8	20.7	14.0	7.4	25.6	1.7	100.0
n	7	30	25	17	9	31	2	121

Chi-square=59.74
$p<.001$

Table 13

Multiple Discriminant Analysis of Success Students Descriptions by Six Groups of Sex-Race Student Groups (White Men, White Women, Black Men, Black Women, Spanish-American Men, Spanish-American Women)

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks Lambda	Chi-Square	df
				0	.6594	180.512***	105
1	.20024	45.14	.408	1	.7915	101.389[a]	80
2	.11682	26.34	.323	2	.8839	53.493	57
3	.06956	15.68	.255	3	.9454	24.339	36
4	.03394	7.65	.181	4	.9775	9.873	17
5	.02304	5.19	.150				

***=p<.001
a=p<.051

Largest Standardized Discriminant Function Coefficients for First Two Functions

	Function 1		Function 2	
Positive	Career Goals	+.20	Intellectual Development	+.17
	Self-Directed Behavior	+.15	Interpersonal Sociability	+.16
	Interpersonal Sociability	+.14	Communication Proficiency	+.13
	Participation in Organizns	+.10		
	Discrimination Issues Be.	+.10		
Negative	Academic Effort and Achievement	-.21	Congruence with the College	-.22
	Persistence toward Graduation	-.10	Optimistic, Emotionally Stable Behavior	-.15

Table 14

Multiple Discriminant Analysis of Nonsuccess Student Descriptions by Six Groups of Sex-Race Student Groups (White Men, White Women, Black Men, Black Women) Spanish-American Men, Spanish-American Women)

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks Lambda	Chi-square	df
				0	.6733	155.245***	105
1	.14772	35.57	.359	1	.7728	101.169[a]	80
2	.10804	26.02	.312	2	.8563	60.90	57
3	.06975	16.80	.255	3	.9160	34.436	36
4	.05407	13.02	.226	4	.9655	13.767	17
5	.03570	8.60	.186				

***=p<.001
a=p<.053

Largest Standardized Discriminant Function Coefficient for First Two Functions

	Function 1		Function 2	
Positive	Interpersonal Responsiveness	+.14	Mathematical Proficiency	+ .16
	Optimistic, Emotionally Stable Behavior	+.14	Intellectual Perspective and Curiosity	+ .15
	Intellectual Perspective and Curiosity	+.11	Artistic Performance	+ .15
	Congruence with the College	+.10	Intellectual Growth	+ .11
			Career Goals	+ .10
Negative	Interpersonal Sociability	-.21	Academic Effort and Achievement	-.17
	Cognitive Proficiency	-.16	Creative Performance	-.13
	Ethical Behavior	-.15	Personal Growth	-.12
	Self-Directed Behavior	-.11	Athletic Performance	-.11
			Cognitive Proficiency	-.10

Table 15

Anovas Comparing Student Descriptions for Sex by Race by Success Type of Respondents

Criterion Dimensions	Mean Dimensions Where Significant: SUCCESS		NONSUCCESS		Significance Level of F-tests: suctyp	sex	race	sex x suctyp	race x suctyp	sex x race x suctyp
neral Academic Dimensions										
ntellectual Growth	white	minority	white	minority	***	**				
ognitive Proficiency	5.55	5.55	4.03	3.90	***	***			*	*
ommunication Proficiency					***	***				
ntellectual Pers. & Curiosity					***	**				
reative Performance					***					
cademic Effort & Achievement					***	**				
elf-Directed Behavior	white	minority	white	minority	***	***			*	
areer Goals	5.01	5.62	3.31	3.54	***	***		a		
	men	women	men	women						
ecific Academic Dimensions										
athematical Proficiency					***					
oreign Language Proficiency					***	*	*			
rtistic Performance					***	**				
rsonal Dimensions										
ersonal Growth	white	minority	white	minority	***					
ptimistic, Emo. Stable Be	5.47	5.21	3.36	3.60	***			**	*	
hical Behavior	5.06	5.51	3.07	3.14	***	***				
hletic Performance	men	women	men	women	***	*				
erpersonal Dimensions	men	women	men	women						
rticipation in Organizations	4.41	4.77	3.07	3.14	***	**		*		
nterpersonal Sociability	5.26	5.64	3.93	3.73	***			**		
nterpersonal Responsiveness	5.03	5.31	3.51	3.49				*		
iscrimination Issues Be.	4.50	4.77	3.71	3.79		*				
titutional Dimensions	white	minority	white	minority						
ongruence with the College	5.56	5.22	3.10	3.41	***			***	***	
ersistence toward Graduation	5.33	5.65	3.23	3.07	***					
	men	women	men	women						

***=p<.001
**=p<.01
*=p<.05
a=p<.054

Table 16

Six Race X Sex Student Groups: Percentages of Nominees in Each Success Type (Groups=White Men, White Women, Black Men, Black Women, Spanish-American Men, and Spanish-American Women)

	ROW PCT / COL PCT / TOT PCT	Student Respondent Groups: WHMEN 1.	WHWOM 2.	BLMEN 3.	BLWOM 4.	SPMEN 5.	SPWOM 6.	ROW TOTAL
CLASS	1.	10 / 32.3 / 7.9 / 3.1	15 / 48.4 / 12.2 / 4.7	1 / 3.2 / 4.5 / 0.3	4 / 12.9 / 14.3 / 1.3	1 / 3.2 / 10.0 / 0.3	0 / 0.0 / 0.0 / 0.0	31 / 9.7
SCHOLAR	2.	8 / 18.6 / 6.3 / 2.5	22 / 51.2 / 17.9 / 6.9	2 / 4.7 / 9.1 / 0.6	6 / 14.0 / 21.4 / 1.9	1 / 2.3 / 10.0 / 0.3	4 / 9.3 / 36.4 / 1.3	43 / 13.4
KIND	3.	21 / 39.6 / 16.7 / 6.6	19 / 35.8 / 15.4 / 5.9	7 / 13.2 / 31.8 / 2.2	2 / 3.8 / 7.1 / 0.6	2 / 3.8 / 20.0 / 0.6	2 / 3.8 / 18.2 / 0.6	53 / 16.6
ARTIST	4.	22 / 46.8 / 17.5 / 6.9	17 / 36.2 / 13.8 / 5.3	3 / 6.4 / 13.6 / 0.9	0 / 0.0 / 0.0 / 0.0	4 / 8.5 / 40.0 / 1.3	1 / 2.1 / 9.1 / 0.3	47 / 14.7
ATHLETE	5.	27 / 54.0 / 21.4 / 8.4	11 / 22.0 / 8.9 / 3.4	6 / 12.0 / 27.3 / 1.9	6 / 12.0 / 21.4 / 1.9	0 / 0.0 / 0.0 / 0.0	0 / 0.0 / 0.0 / 0.0	50 / 15.6
ARTERIST	6.	17 / 35.4 / 13.5 / 5.3	24 / 50.0 / 19.5 / 7.5	0 / 0.0 / 0.0 / 0.0	4 / 8.3 / 14.3 / 1.3	2 / 4.2 / 20.0 / 0.6	1 / 2.1 / 9.1 / 0.3	48 / 15.0
SOCIALIZER	7.	21 / 43.8 / 16.7 / 6.6	15 / 31.3 / 12.2 / 4.7	3 / 6.3 / 13.6 / 0.9	6 / 12.5 / 21.4 / 1.9	0 / 0.0 / 0.0 / 0.0	3 / 6.3 / 27.3 / 0.9	48 / 15.0
	COLUMN TOTAL	126 / 39.4	123 / 38.4	22 / 6.9	28 / 8.8	10 / 3.1	11 / 3.4	320 / 100.0

SQUARE = 52.15062 WITH 30 DEGREES OF FREEDOM SIGNIFICANCE = P<0.0073

Table 17

Multiple Discriminant Analyses of Success Student Descriptions by Eight Class Year-Sex Groups[1]

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlations	Functions Derived	Wilks Lambda	Chi-square	df
				0	.4274	258.867***	147
1	.36052	38.52	.515	1	.5814	165.122**	120
2	.18769	20.05	.398	2	.6906	112.744	95
3	.13609	14.54	.346	3	.7845	73.892	72
4	.10069	10.76	.302	4	.8635	44.679	51
5	.06984	7.46	.256	5	.9238	24.122	32
6	.05698	6.09	.232	6	.9765	7.249	15
7	.02409	2.57	.153				

***=p<.001
**=p<.01

Largest Standardized Discriminant Function Coefficients for Functions I & II

Function I		Function II	
Interpersonal Responsiveness	-.47	Participation in Organizations	-.30
Academic Effort & Achievement	-.24	Personal Growth	-.29
Optimistic, Emotionally Stable Be	-.21	Persistence toward Graduation	-.29
		Intellectual Persp. & Curiosity	-.30
		Intellectual Growth	-.28
Career Goals	+.59	Interpersonal Sociability	+.62
Interpersonal Sociability	+.35	Self-Directed Behavior	+.47
Foreign Language Proficiency	+.37	Cognitive Proficiency	+.32
Participation in Organizations	+.31	Artistic Performance	+.21
Cognitive Proficiency	+.25	Discrimination Issues Behavior	+.20
Self-Directed Behavior	+.22		
Persistence toward Graduation	+.22		
Discrimination Issues Behavior	+.24		

[1]The eight groups are:
Senior Men Senior Women
Junior Men Junior Women
Sophomore Men Sophomore Women
Freshman Men Freshman Women

Table 18

Multiple Discriminant Analyses of Nonsuccess Student Descriptions by Eight Class Year-Sex Groups[1]

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlations	Functions Derived	Wilks Lambda	Chi-square	d
				0	.5009	193.256***	147
1	.19819	26.93	.407	1	.6001	142.719	120
2	.16529	22.46	.377	2	.6993	99.965	95
3	.11285	15.34	.318	3	.7782	70.079	72
4	.09808	13.33	.299	4	.8546	43.928	51
5	.05927	8.05	.237	5	.9052	27.834	32
6	.05774	7.85	.234	6	.9575	12.144	15
7	.04441	6.03	.206				

***=p<.001

	Largest Standardized Discriminant Function Coefficients for Function I	
Negative	Career Goals	-.59
	Interpersonal Responsiveness	-.37
	Creative Performance	-.35
	Intellectual Perspective & Curiosity	-.33
	Foreign Language Proficiency	-.32
	Congruence with the College	-.26
	Participation in Organizations	-.30
Positive	Academic Effort & Achievement	+.71
	Artistic Performance	+.46
	Mathematical Proficiency	+.40
	Optimistic, Emotionally Stable Behavior	.36
	Cognitive Proficiency	+.25

[1]See Table 16 for the eight class year-sex groups.

Table 19

Anovas Comparing Student Descriptions for Class Year by Sex by Success Type for White & Minority Student Respondents

Criterion Dimensions	Significance Levels of Various F-Tests: Minority Student Respondents				White Student Respondents			
	Class Year	Class X Suctype	Class X Sex	Class X Sex X Suctype	Class Year	Class X Suctype	Class X Sex	Class X Sex X Suctype
General Academic Dimensions								
Intellectual Growth			*			*		a
Cognitive Proficiency				a				
Communication Proficiency						a		
Intellectual Pers. & Curiosity								
Creative Performance								a
Academic Effort & Achievement						***		**
Self-Directed Behavior					*	*		a
Career Goals				*		**		**
Specific Academic Dimensions								
Mathematical Proficiency								
Foreign Language Proficiency						*		
Artistic Performance			**					
Personal Dimensions								
Personal Growth	a							
Optimistic, Emo. Stable Be.					**			
Ethical Behavior								
Athletic Performance								
Interpersonal Dimensions								
Participation in Organizations			*					
Interpersonal Sociability					*			
Interpersonal Responsiveness								
Discrimination Issues Be.								a
Institutional Dimensions								
Congruence with the College				*	a	a		
Persistence toward Graduation			a		*	a		a

***=p .001
**=p .01
*=p .05
a=p .10

[1]Differences in dimension scores between success and nonsuccess (success type), men and women (sex), and sex X success type interaction are reported for statistically significant F-tests in Table 15.

Table 20

Eight Class Year X Sex Student Groups: Percentages of Nominees in Each Success Type (Groups=Sr. Men; Jr. Men; Soph. Men; Fresh. Men; Sr. Women; Jr. Women; Soph. Women; Fresh. Women)

		Student Respondent Groups								
	COUNT ROW PCT COL PCT TOT PCT	SRMEN	JRMEN	SOMEN	FRMEN	SRWOM	JRWOM	SOWOM	FRWOM	ROW TOTAL
		4.	5.	6.	7.	8.	10.	12.	14.	
TYPECLAS										
	1.	4	5	2	1	2	7	5	5	31
LEADER		12.9	16.1	6.5	3.2	6.5	22.6	16.1	16.1	9.7
		10.8	12.8	5.3	2.3	5.3	17.1	11.9	12.2	
		1.3	1.6	0.6	0.3	0.6	2.2	1.6	1.6	
	2.	2	3	3	3	6	10	10	6	43
SCHOLAR		4.7	7.0	7.0	7.0	14.0	23.3	23.3	14.0	13.4
		5.4	7.7	7.9	6.8	15.8	24.4	23.8	14.6	
		0.6	0.9	0.9	0.9	1.9	3.1	3.1	1.9	
	3.	6	8	10	6	5	10	5	3	53
GRIND		11.3	15.1	18.9	11.3	9.4	18.9	9.4	5.7	16.6
		16.2	20.5	26.3	13.6	13.2	24.4	11.9	7.3	
		1.9	2.5	3.1	1.9	1.6	3.1	1.6	0.9	
	4.	3	6	4	16	1	2	5	10	47
ARTIST		6.4	12.8	8.5	34.0	2.1	4.3	10.6	21.3	14.7
		8.1	15.4	10.5	36.4	2.6	4.9	11.9	24.4	
		0.9	1.9	1.3	5.0	0.3	0.6	1.6	3.1	
	5.	11	6	9	7	3	2	6	6	50
ATHLETE		22.0	12.0	18.0	14.0	6.0	4.0	12.0	12.0	15.6
		29.7	15.4	23.7	15.9	7.9	4.9	14.3	14.6	
		3.4	1.9	2.8	2.2	0.9	0.6	1.9	1.9	
	6.	9	5	2	3	11	7	6	5	48
CAREERIST		18.8	10.4	4.2	6.3	22.9	14.6	12.5	10.4	15.0
		24.3	12.8	5.3	6.8	28.9	17.1	14.3	12.2	
		2.8	1.6	0.6	0.9	3.4	2.2	1.9	1.6	
	7.	2	4	3	8	1	3	5	6	48
SOCIALIZER		4.2	12.5	16.7	16.7	20.8	6.3	10.4	12.5	15.0
		5.4	15.4	21.1	18.2	26.3	7.3	11.9	14.6	
		0.6	1.9	2.5	2.5	3.1	0.9	1.6	1.9	
	COLUMN TOTAL	37	39	38	44	38	41	42	41	320
		11.6	12.2	11.9	13.8	11.9	12.8	13.1	12.8	100.0

CHI-SQUARE = 83.06577 WITH 42 DEGREES OF FREEDOM SIGNIFICANCE =P<0.0002

Reference Notes

1. Hackman, J.D., & Hoskins, J.H. Dimensions of student performance in Yale College: A first report of the College Criteria Study. Yale University Office of Institutional Research, OIR 72R032, 1972.

2. Hackman, J.D., & Hoskins, J.H. Patterns of successful performance in Yale College: A second report of the College Criteria Study. Yale University Office of Institutional Research, OIR 75R009, 1975.

3. Hackman, J.D. Patterns of unsuccessful performance in Yale College: A third report of the College Criteria Study. Yale University Office of Institutional Research, OIR 75R011, 1975.

4. Hackman, J.D. The Yale community looks at students. Yale University Office of Institutional Research, OIR 76R001, 1976

5. Hackman, J.D., and Taber, T.D. Patterns of student performance based on the College Criteria Questionnaire, submitted for publication.

References

Baird, L. L. The practical utility of measures of college environments. Review of Educational Research, 1974, 44, 307-329.

Biglan, A. The characteristics of subject matter in different academic areas. Journal of Applied Psychology, 1973, 57, 195-203. (a)

Biglan, A. Relationship between subject matter characteristics and the structure and output of university departments. Journal of Applied Psychology, 1973, 57, 204-213. (b)

Campbell, D.T.Admissions policies: Side effects and their implications. American Psychologist, 1971, 26, 636-647.

Cohen, M.D., & March, J.G. Leadership and ambiguity. New York: McGraw-Hill, 1974

Dawis, R.V., Pinto, P.R., Weitzel, W., & Nezzer, M. Describing organizations as reinforcer systems: A new use for job satisfaction and employee attitude surveys. Journal of Vocational Behavior, 1974, 4, 55-66.

Etzioni, A. Two approaches to organizational analysis: A critique and a suggestion. Administrative Science Quarterly, 1960, 5, 257-278.

Feldman, D.A., & Newcomb, T.M. The impact of college on students. San Francisco: Jossey-Bass, Inc., 1970.

Gamson, Z. Utilitarian and normative orientations toward edu ation. Sociology of Education, 1966, 39, 46-73.

Hall, R.H. The concept of bureaucracy: an empirical assessment. American Journal of Sociology, 1963, 69, 32-40.

Lohdahl, J.B., & Gordon, G. The structure of scientific fields and the functioning of university graduate departments. American Sociological Review, 1972, 37, 57-72.

McConnell, T.R. Needed research in college and university organization and administration. In T.F. Lunsford (Ed.), The study of academic adm. istration. Boulder, Colo.: Western Interstate Commission for Higher Education, 1963.

Nie, N., Hull, C.H., Jenkins, J.G., Steinbrenner, K., & Bent, D.H. Statistical Package for the Social Sciences. New York: McGraw-Hill, 1975.

Smart, J.C. Environments as reinforcer systems in the study of job satisfaction. Journal of Vocational Behavior, 1975, 6, 337-347.

Smart, J.C., & Elton, C.F. Goal orientations of academic departments: A test of Biglan's model. Journal of Applied Psychology, 1975, 60, 580-588.

Taber, T.D., & Hackman, J.D. Dimensions of undergraduate performance. Journal of Applied Psychology, 1976,

Tatsuoka, M.M. Multivariate analysis: Techniques for educational and psychological research. New York: Wiley, 1971.

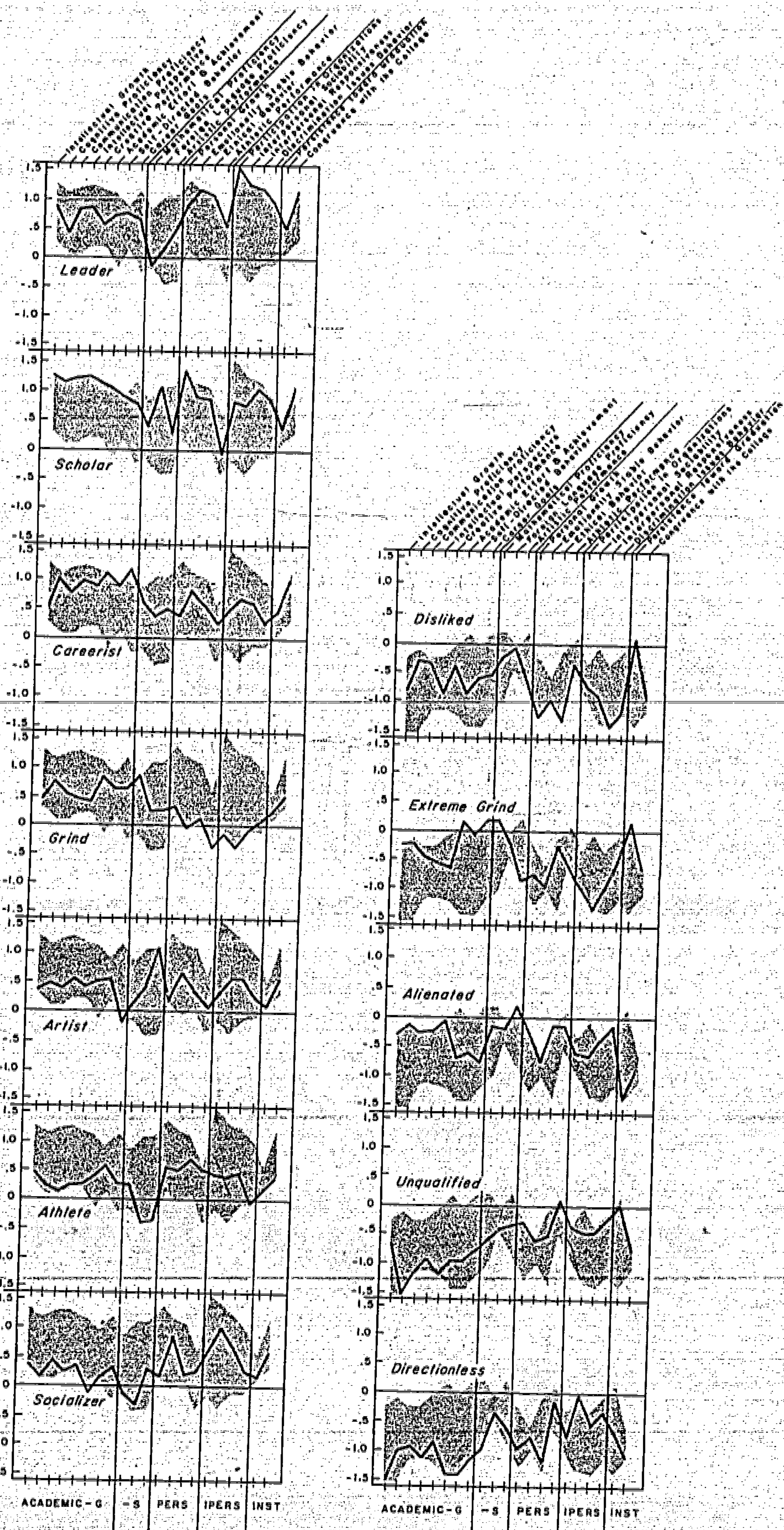
Vreeland, R.S., & Bidwell, C.E. Classifying university departments: An approach to the analysis of their effects upon undergraduates' values and attitudes. Sociology of Eduation, 1966, 38, 238-254.

Pugh, D., Hixon, D., Hinnings, C., & Turner, C. Dimensions of organization structure, Administrative Science Quarterly, 1968, 14, 91-114.

Wieland, G.F., & Ullrich, R.A. Organizations: Behavior, design, and change. Homewood, Ill.: Irwin, 1976.

Figure 1

Patterns of Student Performance:
Profiles of Seven Successful
and Five Unsuccessful
Undergraduate Types


Leader
Scholar
Careerist
Grind
Artist
Athlete
Socializer
Disliked
Extreme Grind
Alienated
Unqualified
Directionless
ACADEMIC-G
-S
PERS
IPERS
INST
ACADEMIC-G
-S
PERS
IPERS
INST