Linking Student Precollege Characteristics to College Development Outcomes: The Search for a Meaningful Way to Inform Institutional Practice and Policy

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Abstract

Using a typological schema derived from freshman survey data and other empirical measures, this study examines the link between students' traits upon entry to college and their college development outcomes in various areas as measured at the exit point. The findings indicate the typological schema is predictive of student outcomes in terms of self-reported gains and future plans, validating the definitions of student types to a significant extent. Also, the findings help institutional leaders reflect upon questions of alignment between institutional mission focus on the one hand and student interests and aptitudes on the other: How well do various aspects of our programs meet the distinctive needs of different kinds of students? Whom do we serve well, and whom less well, and in what ways?

KEY WORDS: precollege characteristics; student types; reasons for college; college activities; academic success; career aspirations; future lifestyle; college outcomes.

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INTRODUCTION

In trying to gain a better understanding of student attitudes, values, and

expectations of college and develop stronger service programs to maximize student

college experiences, a growing number of student typologies has been developed in the

past decades (Astin, 1993; Clark & Trow, 1966; Hackman & Tabor, 1976; Horowitz,

1987; Katchadourian & Boli, 1985; Keniston, 1965; Kuh, Hu, & Vesper, 2000;

Newcomb, Koenig, Flacks, & Warwick, 1967). As noted by Astin (1993), however,

earlier research-based typologies, although occasionally discussed in the literature, have

seldom been used to guide institutional practice or decision-making.

In order to render their studies more applicable in educational research and

practice, higher education researchers have recently begun to use longitudinal, multi-

institution data sets and apply private marketing methodologies to illuminate student

interests and aptitudes. For example, using data from the Cooperative Institutional

Research Program's annual survey of entering first-year students, Astin (1993) developed

via factor analysis an empirical typology based on a national sample of 2,595 students in

the 1971 entering cohort who responded to 60 questions on the freshman survey that

provided information on students' values, self-concept, behaviors, attitudes, and

expectations. In a more recent study, Kuh, Hu, and Vesper (2000) used a sample of

51,155 full-time undergraduate students from 128 institutions who responded to the

College Student Experiences Questionnaire between 1990 and 1997 and developed a

typology based on student patterns of engagement in college activities.

While contributing to our understanding of college student characteristics, these studies, as with other typologies and educational research, do have some limitations. In his study, Astin (1993) relied on factor analysis for his typology. As a result, he left thirty-nine percent of students unclassified in his sample. Also, the "uncommitted" type in Astin's study was created with student expectations for college rather than actual student behaviors during college. Although Kuh, Hu, and Vesper (2000) used cluster analysis for their typology of college students according to the patterns of engagement in college activities and associated student types with college outcomes, their study did not examine students' traits upon entering college and thus missed an important link in predicting student achievement at college. In addition, these two studies both failed to examine factors that might have influenced students' decision to go to college in the first place. As students' beliefs and attitudes tend to affect student behaviors (Pascarella & Terenzini, 1991), we believe that linking student precollege characteristics to college outcomes may shed light on the nature of student achievement.

The purpose of this study is to explore the link between students' traits upon entering college and their college development outcomes in various areas as measured at the exit point. Using a typological schema and other empirical measures, this study seeks to examine relationships between how students may appear on their admissions applications and how they have achieved in, and contributed to, their college experience. Five broad questions guide this study:

- ♦ Do students display different traits upon entering college?

- ♦ Do students report different reasons for their decision to attend college?

- ♦ Do students show different patterns of engagement in college activities?

♦ Do students differ from each other in their academic achievement and satisfaction?

♦ Do students have different career aspirations and life goals?

REVIEW OF RELATED STUDENT TYPOLOGIES

Since 1960, three lines of inquiry have examined student attitudes, values, and experiences for a better understanding of personal and social factors that are likely to affect student behaviors (Table 1). Guided by conceptual models of student subcultures, the first line of research chiefly examines the "fit" between the characteristics of students and the characteristics of an institution. Three studies along this line were notable: Clark and Trow (1966), Newcomb, Koenig, Flacks, and Warwick (1967), and Katchadourian and Boli (1987). Using data collected in the late 1950s and early 1960s from students at the University of California, Berkeley, Clark and Trow (1966) categorized students on a two-dimensional scheme: identification with the college and involvement with ideas. As a result, they identified four distinctive student subcultures: (a) Collegiate, (b) Vocational, (c) Academic, and (d) Nonconformist. Students in the collegiate group showed a high identification with the college and a low involvement with ideas. Students in the vocational group displayed low identification with the college and low involvement with ideas, while students in the academic group scored high on both dimensions. Although ranking low in institutional identification, the nonconformists were highly interested in intellectual matters and issues related to art, literature, and politics.

Similarly, in their study of enrolled students at Bennington College, Vermont, Newcomb, Koenig, Flacks, and Warwick (1967) used two clusters of norms (i.e., individualism and intellectualism) to guide their typology, which led to their identification of six dominant student groups: (a) Creative Individualists, (b) Wild Ones,

(c) Scholars, (d) the Social Group, (e) Leaders, and (f) Political Activists. With strong beliefs in principles and commitment to creative pursuits, Creative Individualists ranked high on both individualism and intellectuality. Students in the Wild group displayed high individualism but low intellectuality. They loved wild parties but cared little about academic work. In contrast to the Wild group, Scholars focused on their academic work but ignored other things in life. With sole interest in social life and having fun, the Social group ranked low on both dimensions. Leaders participated actively in the student government and were popular among major student groups, while Political Activists were interested in public affairs, civil rights, campus politics, and social conditions.

With the apparent increase of student interest in mere preparation for a career rather than in the intrinsic and intellectual benefits derived from the learning process, Katchadourian and Boli (1985) examined one cohort of Stanford students from their freshman year to graduation and classified them on a two-dimensional scheme of intellectualism and careerism. The interplay of the two dimensions resulted in four types of students: (a) Careerists, (b) Intellectuals, (c) Strivers, and (d) Unconnected. By definition, Careerists viewed higher education mainly as getting training for a career, while Intellectuals aspired to extend their knowledge and enjoy the learning process. Strivers attempted to excel in their studies and at the same time get prepared for a successful career of their choice, while the Unconnected scored low on both dimensions and failed to engage in college.

The second line of research on student typologies examines student characteristics through the functions of colleges and the purposes of higher education at particular points of time. Representative of this line of research were Keniston's (1973) and Horowitz's

(1987) historic typologies of college students. In his examination of the functions and
missions of colleges and universities, Keniston (1973) identified seven types of students:
(a) Gentleman-in-waiting, (b) Apprentice, (c) Big man on campus, (d) Professionalists, (e)
Underachievers, (f) Activists, and (g) Disaffiliate. According to Keniston, colleges in
early times were largely charged to educate the children from the privileged class.
Students at the time were actually gentlemen-in-waiting, for they went to college mainly
to refine and prepare themselves for the upper-class life which they were entitled to live
by birth. With the spread of democratic ideals and consciousness through American
society in the first half of the nineteenth century, education became a prerequisite for
higher status, upward mobility, and success in life. Thus, students of this era became
apprentices in the journey of their lives, learning new virtues and skills that would likely
lead them to a different and better world. With more economic development and
expansion of government services in American society in the early twentieth century, the
function of education changed from vocational training to "teaching the ability to be
likable and persuasive and to get along with all kinds of people." Thus a student with
especially strong social skills began to emerge as the Big Man on Campus. Later, the
development of modern technology gave rise to a new type of students, namely, the
professionalists, who had high professional expertise and were capable of handling
technical problems. With the emergence of the professionalist came three new types of
"deviant" students: the Activist, the Disaffialiate, and the Underachiever. Engaging in
student demonstration, the Activists protested against segments of the university or
society to press for reform or improvement. The Disaffiliate were politically inactive "but
culturally alienated students who rejected totally the offerings and values" of their society.

By way of contrast, the underachievers were students who accepted the values of the university and the society as well as their own inadequacy.

Examining undergraduate cultures from the end of the eighteenth century to the late 1980s, Horowitz (1987) classified students into four major groups: (a) College Men, (b) Outsiders, (c) Rebels, and (d) New Outsiders. College men in the nineteenth century were from affluent families; they "fought for position on the playing field and in the newsroom." Outsiders at the time were hardworking students and cherished the belief that today's work would be rewarded with tomorrow's accomplishments. Rebels emerged in the early twentieth century and challenged traditional college life, including football, fraternities, and by 1960 the curriculum as well. In the 1970s new outsiders began to emerge as prosperous collegians, striving to return to the privileged world in which their affluent parents had been living.

The third line of research on student typologies empirically examines college student performance, attitudes, and engagement patterns in college activities. Based on ratings of student performance on a wide range of dimensions in their study of Yale matriculants, Hackman and Taber (1976) identified twelve distinctive patterns of student performance that were classified into two groups: (a) success types and (b) nonsuccess types. The success types included Leaders, Scholars, Careerists, Grinds, Artists, Athletes, and Socializers. In contrast, the nonsuccess types consisted of Extreme Grinds and the Disliked, Alienated, Unqualified, and Directionless students. The Leaders ranked highest in organizational participation and played leading roles in student organizations and activities, while the Scholars ranked highest in intellectual performance. Noted for their remarkable mathematical proficiency, the Grinds attached great emphasis to academic

performance. The Artists were characterized by their exceptionally high levels of artistic performance, and the Athletes by their exceptionally high levels of athletic performance. Finally, the Socializers were rated relatively high on interpersonal sociability but low on academic dimensions. Among the nonsuccess types of students, the Extreme Grinds failed to balance academic work with nonacademic aspects of college life, while the Disliked students scored low on all personal and interpersonal behaviors. The Alienated students had high ratings on artistic performance, but they had not yet developed career plans and were low in self-direction. Isolated from the college and from many other people, the Alienated students were extremely unhappy with their college experience. With poor academic performance, the Unqualified students were viewed as unlikely candidates for any advanced study. The Directionless students, chiefly interested in socializing, were least identified with their college.

More recently, Astin (1993) used factor analysis to examine student characteristics at the time of entry to college and empirically identified seven types of students: (a) Scholar, (b) Leader, (c) Hedonist, (d) Status Striver, (e) Social Activist, (f) Artist, and (g) Uncommitted. Astin's scholarly type showed a high degree of academic and intellectual self-esteem and high aspirations for academic success and advanced degree. The Social Activists displayed a high degree of activity, assertiveness, and social involvement. The Artists scored high on self-ratings of artistic ability and values, whereas the Hedonists were chiefly defined by their party behaviors. The Leaders had high self-ratings on popularity, social self-confidence, leadership ability, and public speaking ability, viewing themselves as popular, sociable, and outgoing. While the Status Strivers were committed to career and financial success, the Uncommitted anticipated

disengagement in higher education, such as changing major field or career choice, dropping out of college, or transferring to another college before graduating.

At the turn of the twenty-first century, Kuh, Hu, and Vesper (2000) identified ten types of students based on their engagement patterns in college activities: (a) Disengaged, (b) Recreator, (c) Socializer, (d) Collegiate, (e) Scientist, (f) Individualist, (g) Artist, (h) Grind, (i) Intellectuals, and (j) Conventionals. Students in the Disengaged group scored below average on all college activities, while the Recreators devoted a considerable amount of effort to sports and exercise but below average in most other activities. The Socializers had substantial social interaction with their peers, while the Collegiates distinguished themselves by active involvement in cocurricular activities. The Scientists scored markedly high on science and quantitative activities, whereas the Individualists interacted frequently with peers and participated in artistic activities. The Artists scored strikingly high on artistic activities and faculty interaction, and the Grinds distinguished themselves by a high level of academic effort. While the Intellectuals were engaged in all types of college activities, the Conventionals displayed a mixed pattern of involvement.

Although different approaches were used to generate these different typologies, the student types identified by the aforementioned studies showed considerable stability over time (Astin, 1993; Kuh, Hu, & Vesper, 2000). While these research findings help us understand the evolving nature of college student characteristics, recent studies have, as noted earlier, either left students' actual behaviors during their collegiate years unexamined or failed to take students' precollege characteristics into account. Hence we assume linking students' precollege characteristics with their college behaviors and

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outcomes and examining the underlying motives for college are likely to produce interesting findings.

DATA AND METHODOLOGY

The data source for this study is the Cooperative Institutional Research Program (CIRP)'s annual survey of incoming students of an entering class, conducted jointly by the American Council on Education and the University of California at Los Angeles. For the purpose of this study, we selected a medium-sized, private research university (i.e., our institution) and fourteen highly selective private peer institutions[1] as a convenience sample, which consisted of seven universities and eight colleges. To examine student characteristics at these institutions, we used specifically the longitudinal CIRP Freshman Survey data from 1994 to 2002 for our typology. We characterized our institution in the context of its peers because we intended to examine not only student characteristics at college entry in general but also college development outcomes based on exit survey data that were available for our institution, but not available for our peer institutions. Due to this focus on student characteristics at elite private institutions, we fully recognize that it would not be appropriate to generalize our substantive findings to students at all institutions nationally. However, the methodology we used for this study may be worth noting, and our focus on the expectations and experiences of our best students may also be of general interest.

For this study, we used two sets of statistical procedures, "factor" and "cluster" analyses, to define a categorical typology of students according to their freshman survey responses. Due to the annual changes made to the CIRP Freshman Survey instrument, we

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[1] "Peer" institutions were chosen on the basis of separate analyses of admissions "reply card" data indicating students were roughly equally likely to attend our institution or the other if admitted to both.

identified 59 questions, common to all the survey instruments administered over the years, as providing information on students' values, self-concept, behaviors, attitudes, and expectations. Based on a total of 23,893 student responses to the 59 common questions on the CIRP Freshman Survey, we performed factor analysis to identify statistically significant correlations between questions, which resulted in eight student traits (Table 2). We then standardized each of the traits factor scores with mean of zero and standard deviation of one and conducted cluster analysis to group students according to their array of scores across the entire range of traits considered. "Cluster analysis" seeks to identify relatively homogeneous groups of cases based on selected characteristics. Through the analysis, student responses were grouped into a smaller set of clusters that were mutually exclusive and exhaustive (Bailey, 1994). There is no set number of categories at the beginning of the analysis; it is, instead, an iterative, best-fitting analysis. As a result, we identified five student types, in no particular order: (a) Hedonists, (b) Success Strivers, (c) Artists, (d) Uncommitted Individualists, and (e) Scholars (Table 3). When appropriate, we used Astin's (1993) terms to depict the student types identified in this study.

To learn more about the distinctive characteristics of the various groups, we examined each type's background characteristics, including high school grades, time use in high school, SAT scores, and reasons for college. Also, to examine college outcomes by student type, we selected a sample of 4371 entering students who completed the CIRP Freshman Survey between 1994 and 1997 at our institution and linked these respondents to the CIRP Freshman Survey with their responses to an exit survey administered to them between 1998 and 2001 via student ids volunteered on both surveys. As a result, we identified a small but representative sample of 417 respondents as participants in both

surveys. We then examined student participation in college activities, career expectations, life goals, and other issues of interest.

In the exit survey, a set of questions asked students to assess how their abilities in 25 areas were enhanced by their undergraduate experiences. This set of questions represented a wide range of educational outcomes such as writing and speaking abilities, ability to work effectively as a team, use quantitative tools, identify moral issues, and understand one's own abilities. The 25 "gains" questions were classified via factor analysis for simplicity of presentation into five categories: (a) intellectual capacity, (b) general education, (c) personal development, (d) understanding science, and (e) leadership skills (Table 7). The student types identified in this study were then compared on satisfaction, grades, gains factors, and the sum of gains for a better understanding of student characteristics. In this way, we tested the typological schema derived on the basis of responses to freshman survey data independently against objective outcomes measures such as GPA and self-reported measures of achievement from the exit survey, validating the schema to the extent it was predictive.

RESULTS

In what follows, we present a brief description of the major findings on the chief characteristics of the five types of students identified in this study. The findings are presented in two parts: (a) student characteristics at college entry and (b) college outcomes by student type. In the first part, we report findings regarding students' general characteristics based on the dataset of responses from all institutions in the study, such as student family and academic backgrounds, high school behaviors and activities, and reasons for college. Distribution of student types by institution type is also briefly

discussed in this section. In the second part, we present findings concerning college activities, academic success and satisfaction, career aspirations, and life goals for each group based on responses to the linked exit surveys from students at one private research university.

Student Characteristics at College Entry

Hedonists

General Characteristics. "Hedonists" were defined by their affinity for stereotypical party behaviors such as drinking and smoking as well as academic disengagement indicated by boredom. As shown in Table 2, Hedonists scored below average on every trait scale except Hedonism.

Hedonists comprised approximately 8% of the freshman survey respondents in our sample (Table 4). They were more likely to be men (10% compared to 6% of women) and Caucasian, Hispanic, and Asian students, and they were especially unlikely to be African-American students (8% of both Caucasians and Hispanics, and 7% of Asians, compared to 4% of African-Americans). The finding that African-American students tended to be underrepresented among Hedonists is consistent with a 24-year trend study of African-American students by Astin (1990) as well as his typology of college students. This finding also generally supports the characterization of African-American students in elite private universities as described by Bowen and Bok (1998).

Academically, Hedonists had significantly lower high school grades than any other student type and their combined SAT scores were also significantly lower than those of Artists and Scholars. Hedonists tended to come from wealthy families, and they

reported significantly higher parental income than did Artists and Uncommitted Individualists.

High School Activities. In high school, Hedonists were especially likely to attend parties and watch TV, and they were in general less likely than any other student type to spend time studying, doing volunteer work, participating in student clubs, or assuming household/childcare duties (Table 4).

Reasons for College. In deciding to go to college, Hedonists were more likely than Artists to consider making more money to be important, influential factors, but they were less likely than any other student type to regard gaining a general education, improving study skills, becoming more cultured, and encouragement from role models as vital to their decision (Table 5). In deciding to attend a particular institution of their choice, Hedonists were similar to other students in many ways: They valued its good academic and social reputation and emphasized its size (Table 5). Of all student types, they were, however, the least likely to cite its reputation, size, or the availability of special educational programs as important factors in their decision-making process.

Success Strivers

General Characteristics. "Success Strivers" scored above average on every trait scale except Hedonism and Non-Commitment. With high self-confidence, Success Strivers displayed a strong desire for career success and solid interest in political and social issues (Table 2). In addition, they aspired to engage in artistic activities and pursue academic success during college.

Success Strivers comprised about 25% of the freshman survey respondents in our sample, making up the largest group of the five student types (Table 4). Approximately

equal proportions of each gender fell in this category. Compared to Caucasian students, minority students were more likely to be represented in this group (44% African-Americans, 33% Hispanics, and 30% Asians, compared to 20% Caucasians). They had on average higher high school grades than Hedonists, Artists, and Uncommitted Individualists, but their combined SAT scores were significantly lower than those of Artists and Scholars.

Success Strivers tended to come from families with average incomes (Table 4). Their parents received more formal education and earned higher income than those of Uncommitted Individualists, but they were less comparable to those of Scholars in these regards. Interestingly, both the aided and unaided athletes tended to fall in this category. This characterization is very consistent with Shuman and Bowen's (1998) portrayal of the athletes at elite private colleges and universities, for their study also found athletes tending to have strong interest in career success and economic returns.

High School Activities. In high school, Success Strivers spent in general more time studying, talking to teachers outside of class, doing volunteer work, and participating in student clubs than other students (Table 4). They performed more household/childcare duties than Hedonists, Artists, and Scholars and did more leisurely reading than Uncommitted Individualists and Scholars.

Reasons for College. In deciding to go to college, Success Strivers were most likely to cite improving study skills, getting better jobs, and making more money as important, influential factors (Table 5). They were also more likely than Hedonists, Uncommitted Individualists, and Scholars to emphasize the importance of gaining a general education and becoming more cultured. In addition, parents' wish and

encouragement from role models played a significant role in their decision-making process. In deciding to attend a particular institution of their choice, Success Strivers especially valued its good academic and social reputation in addition to the availability of financial aid and special programs (Table 5).

Artists

General Characteristics. "Artists" were distinctively characterized by their high self assessment of artistic ability. Although disinterested in career success, Artists showed high interest in political and social issues in addition to academic success. They were relatively uncommitted to higher education and had strong affinity for stereotypical party behaviors, second only to Hedonists in the latter respect. As displayed in Table 2, Artists scored high above average on Artistic Ability, Political Interest, Academic Achievement, Social Concern, Hedonism, and Non-Commitment but below average on Self-Confidence and Career Success.

Artists represented about 23% of the freshman survey respondents in our sample (Table 4). They were especially likely to be women (28% compared to 18% men). Of all racial/ethnic groups, Caucasian students were the most likely to be Artists, while African-American students were the least likely to be so (Caucasians 27%, Hispanics 17%, Asians 16%, and African-Americans 11%).

Artists reported significantly higher average high school grades than those of Hedonists and Uncommitted Individualists. Their average verbal SAT score was significantly higher than that of any other student type, but their math SAT score was significantly lower than that of Scholars by a margin of 25 points. Artists were especially likely to come from families with moderate income. Their parents appeared to have had

more formal education than those of other students. In addition, Artists were more likely than Hedonists, Scholars, and Success Strivers to characterize their political views as liberal (Artists 62%, Uncommitted Individualists 45%, Success Strivers 43%, Hedonists 42%, and Scholars 34%).

High School Activities. In high school, Artists spent more time studying, performing volunteer work, and assuming housework/childcare duties than Hedonists and Scholars (Table 4). They also spent more time talking with teachers and participating in clubs than Scholars and Uncommitted Individualists. In addition, they were more likely than Uncommitted Individualists to socialize with friends and attend parties. Of all student groups, Artists were the most likely to read for pleasure, but the least likely to watch TV or exercise.

Reasons for College. In deciding to go to college, Artists were especially likely to cite gaining a general education as one of the very important, influential factors (Table 5). They were more likely than Hedonists and Scholars to emphasize the importance of improving study skills, becoming more cultured, and encouragement from role models. Of all student types, Artists were the most likely to cite getting away from home but the least likely to cite making more money as influential, motivating factors. In addition, they were less likely than Success Strivers, Uncommitted Individualists, and Scholars to stress the importance of getting better jobs in their decision-making process. In deciding to attend a particular institution, Artists were more likely than Hedonists to value its good academic and social reputation (Table 5). Compared with Hedonists and Scholars, Artists were more likely to emphasize the availability of financial aid and special educational

programs. Of all student types, Artists were the most likely to attach high importance to the size of an institution.

Uncommitted Individualists

  General Characteristics. "Uncommitted Individualists" were defined by their high degree of non-commitment to higher education. As indicated in Table 2, Uncommitted Individualists scored above average on Non-Commitment and Social Concern but below average on any other trait scale.

  Uncommitted Individualists comprised 20% of the freshman survey respondents in our sample (Table 4). They were more likely to be women (27% compared to 14% men) and minority students (Asians 26%, Hispanics 26%, African-Americans 25%, and Caucasians 19%).

  Academically, Uncommitted Individualists were more likely than Hedonists but less likely than Success Strivers, Artists, and Scholars to get an A or A+ in high school (Table 4). Also, Uncommitted Individualists had significantly lower combined SAT scores than Success Strivers, Artists, and Scholars. In comparison to other student types, Uncommitted Individualists had less educated parents with lower income.

  High School Activities. In high school, Uncommitted Individualists devoted more time to studying than Hedonists and Scholars (Table 4). They spent more time talking with teachers outside of class and working for pay than Scholars. They also spent more time engaging in volunteer work or assuming housework/childcare duties than Hedonists and Scholars. They watched more TV than Artists, but less likely than Success Strivers and Artists to read for pleasure or participate in clubs. In addition, they were less

likely than Success Strivers and Scholars to participate in sports. Of all student types, they were the least likely to socialize with friends or attend parties.

Reasons for College. In deciding to go to college, Uncommitted Individualists were more likely than Hedonists and Scholars to emphasize the importance of gaining a general education, improving study skills, becoming more cultured, and encouragement from role models (Table 5). In addition, they were more likely than Artists to emphasize the importance of making more money. In deciding to attend a particular institution of their choice, Uncommitted Individualists were more likely than Hedonists to perceive its good academic and social reputation to be very important. Also, they tended to attach more importance to the availability of financial aid and special programs than Hedonists and Scholars (Table 5). The higher importance Uncommitted Individualists tended to attach to the availability of financial aid in their decision to attend a particular institution of their choice might be closely related to their lower family income.

Scholars

General Characteristics. "Scholars" were characterized by their outstanding academic abilities and high aspirations for college success and advanced degrees. As shown in Table 2, Scholars scored above average on Academic Achievement, Self-Confidence, and Career Success, while below average on Political Interest, Artistic Ability, Hedonism, Social Concern, and Non-Commitment.

Scholars represented about 24% of the freshman survey respondents, making up the second largest group of the five student types (Table 4). They were more likely to be men (roughly 33% compared to 16% women), Caucasian and Asian students (Caucasians 26%, Asians 22%, Hispanics 17%, and African-Americans 15%).

Judging by their average high school grade, Scholars had better academic performances than Hedonists, Artists, and Uncommitted Individualists (Table 4). They had the highest combined SAT scores, and they also reported the highest parental income.

High School Activities. In high school, Scholars spent more time studying, performing volunteer work, and participating in clubs than Hedonists. They were less likely than any other student type to talk with teachers outside of class, but they spent more time on sports than did Hedonists, Artists, and Uncommitted Individualists. They attended parties less frequently than Hedonists, but more frequently than Artists and Uncommitted Individualists. Like Hedonists, Scholars were likely to watch TV on a frequent basis, but they were less likely than any other student type to work for pay or assume household/childcare duties. They were also less likely than Hedonists, Success Strivers, and Artists to read for pleasure (Table 4). Interestingly, the athletes among Scholars were most likely to be unaided.

Reasons for College. In deciding to go to college, Scholars were more likely than Hedonists to emphasize the importance of gaining a general education, improving study skills, becoming more cultured, and encouragement from role models. Also, they were more likely than Hedonists, Artists, and Uncommitted Individualists to cite making more money and getting better jobs as important, influential factors. They were, however, less likely than Success Strivers and Artists to stress the importance of gaining a general education and becoming more cultured (Table 5). In deciding to attend a particular institution, Scholars were more likely than Hedonists to emphasize its size, special programs, and social reputation. They were similar to Success Strivers in attaching high importance to its good academic reputation (Table 5). As they came from wealthy

families, the availability of financial aid appeared to have played a less significant role in their decision.

Distribution of Student Types by Institution Type. As discussed above, our sample of 23,893 surveys was drawn from fifteen highly selective private institutions: seven universities and eight colleges. Even within this narrow sample, we observed some significant trends in the distribution of the student types discussed above across the institutions included in our sample.

In general, the colleges differed from the universities in our sample in being far more significantly populated by Artists (36%), Uncommitted Individualists (23%), and Hedonists (11%), who together represented over two-thirds of the students in the smaller institutions in our sample. In contrast, more than half of university students in our sample were Success Strivers (29%) or Scholars (28%), with fewer Artists (19%), Uncommitted Individualists (19%), and Hedonists (6%).

College Outcomes by Student Type

In this section, we focus on the issue of outcomes by student type. Due to lack of comparison college outcome data from our peer institutions, we discuss only the college outcomes of a sample of 417 students at our own institution whose freshman survey responses were linked to their exit survey responses we possessed. For this sample, the percentages of student types are: Hedonists (6%), Success Strivers (34%), Artists (12%), Uncommitted Individualists (19%), and Scholars (28%). In what follows, the findings on the college outcomes are presented in the order of college activities, academic success and satisfaction, career aspirations and future lifestyle for each type of students we identified above.

Hedonists

      College Activities. During college, Hedonists tended to continue to watch TV and attend parties more frequently than other students, but they spent a comparable amount of time studying. They participated in fraternity/sorority activities and intercollegiate athletics more often than in political, artistic, or religious activities (Table 6). They were more likely than other students to assume leadership roles in a social fraternity/sorority, student government, and student newspapers. In view of the small number for this group in our sample and the relative paucity of student leadership positions as a possible college experience, this finding should be interpreted with caution.

      Academic Success and Satisfaction. At the end of their undergraduate study, Hedonists reported lower levels of development in general education, personal development than Success Strivers and Artists (Table 8). Also, they reported lower levels of development in understanding science than Success Strivers, Uncommitted Individualists, and Scholars and ranked lowest in total gain. Judging by the average grades reported, Hedonists were also less comparable to other students in academic performance, either overall or in their major.

      Despite all this, Hedonists were highly satisfied with their college experience and indicated high likelihood of recommending their alma mater, well beyond their expectations of satisfaction upon entering college. With regard to specific aspects of college life, Hedonists indicated higher levels of satisfaction with psychological counseling services than any other students. They indicated notably high levels of satisfaction with social science courses, academic advising and courses in their major fields, but relatively low levels of satisfaction with natural sciences and math courses and

computer services and facilities. As Hedonists tended to major chiefly in social sciences (see the next section) and to spend time entertaining themselves, it is quite possible that they might not have taken advantage of natural sciences and math courses or made much use of computer services and facilities.

Career Aspirations and Future Lifestyle. Hedonists tended to indicate arts and humanities, engineering, and social sciences as their probable major upon entering college and aspire to be artists, engineers, doctors, and business executives/owners. During the course of their undergraduate study, Hedonists tended to congregate mainly in social sciences. They were especially likely to earn graduate degrees in arts and sciences and business. Of all student types, they were the least likely to aspire to obtain their Ph.D. or law degrees.

When thinking about future lifestyle, Hedonists were less likely than Success Strivers to consider it important to work for social change, work closely with other people, encounter a variety of people, raise a family, help others in difficulty, or leave the world a better place (Table 9). They were also less likely than Artists to attach importance to engaging in creative activities or being stimulated intellectually, but they were more likely than Artists to aspire to pursue financial success and assume administrative responsibilities for others. These findings appeared to be consistent with the values and attitudes Hedonists had upon entering college: They scored far below average on political interest, social concern, and artistic ability.

Success Strivers

College Activities. During college, Success Strivers tended to use computers for academic work more frequently than other students. They were especially likely to

participate in independent study/research for credit and noncredit faculty research. In extra-curricular activities, Success Strivers tended to participate frequently in volunteer services and religious groups (Table 6). Also, they tended to assume leadership roles in a variety of activities, such as music/theater groups, student government, political groups, or religious groups.

Academic Success and Satisfaction. Success Strivers reported the highest scores for college development across the board; they scored particularly high on leadership skills and total gains (Table 8). Success Strivers were highly satisfied with their college experience and would strongly recommend their alma mater.

With regard to specific aspects of college life, Success Strivers indicated high levels of satisfaction in many areas. They were particularly highly satisfied with opportunities for internships or study off-campus or abroad, food services, the administration's responsiveness to student concerns, extracurricular events and opportunities to participate in extracurricular activities. However, they were relatively dissatisfied with engineering courses, foreign language facilities, and advising before declaring a major.

Career Aspirations and Future Lifestyle. Upon entering college, Success Strivers, like Scholars, appeared to be relatively certain of their major and career choices compared to other students. They were especially likely to aspire to be doctors, business executives/owners, and lawyers (Table 4). During the course of their undergraduate study, Success Strivers tended to major in social and natural sciences and aspire to earn their terminal degrees in medicine, business, and law.

When thinking about future lifestyle, Success Strivers were especially likely to emphasize the importance of working closely with other people, having a secure and stable future, working for social change, encountering a variety of different people, raising a family, helping others in difficulty, being well off financially, obtaining recognition from others in their own fields, influencing significant political decisions, and leaving the world a better place. They were, however, less likely than Artists to stress the importance of doing creative or expressive work (Table 9). Compared with other students, Success strivers were more determined in their pursuit of career success.

Artists

College Activities. During the course of their undergraduate study, Artists were especially active in music/theater groups. During the first year at college, they also participated actively in political groups and honor societies. Compared with other students, Artists were generally more likely to assume leadership roles in music/theater groups and volunteer service (Table 6). In addition, Artists were more likely than students of any other type to participate in the study-abroad programs (Artists 70%, Success Strivers 45%, Uncommitted Individualists 45%, Scholars 38%, and Hedonists 33%). Interestingly, a sub-analysis by race/ethnicity showed that Hispanic students were the most likely to participate in the study-abroad programs, while African-American students were the least likely to do so (Hispanics 52%, Caucasians 50%, Asians 29%, and African-Americans 28%).

Academic Success and Satisfaction. Artists reported high levels of development in the areas of general education, personal development, and total gains, second only to Success Strivers in these areas (Table 8). They had outstanding average academic

performance, but they indicated slightly, though statistically insignificantly, lower levels of overall satisfaction with their undergraduate education in comparison to Hedonists, Success Strivers, and Scholars. Compared with Hedonists and Scholars, Artists also appeared less likely to recommend their alma mater, but again the difference was statistically insignificant.

With regard to specific aspects of college life, Artists were especially highly satisfied with class size, but they were relatively dissatisfied with engineering courses, availability of courses, courses in major fields, independent study, science facilities, tutorial help, advising before declaring a major, career counseling, health services, psychological counseling services, financial aid office, financial services, social life, climate for minorities, sense of community, ethnic/racial diversity, athletic opportunities, and campus security. Judging from these results, Artists' dissatisfaction with their college experiences appeared to be more widespread than that of other students, which suggests that Artists might have held a more critical attitude toward their experiences.

Career Aspirations and Future Lifestyle. Artists tended to major in humanities and social sciences (Table 4). They were especially likely to be artists and aspire to earn their highest degrees in fine and performing arts. Although especially uncertain of their choice of a major at the time of entry to college, Artists were less likely than other students to cite parents as valuable sources for their long-term career aspirations.

When thinking about career or future lifestyle at the exit point, Artists were more likely than any other student type to aspire to engage in creative or expressive work (Table 9). They were also more likely than Hedonists and Scholars to work for social change. This finding appeared to be consistent with the values and attitudes Artists had

upon entering college: They scored well above average on Artistic Ability, Political Interest, and Social Concern.

Uncommitted Individualists

College Activities. During College, Uncommitted Individualists tended to spend less time studying or using computers for academic work. Like Artists, they tended to assume leadership roles in volunteer work (Table 6).

Academic Success and Satisfaction. Uncommitted Individualists' academic performance was lower than that of Artists or Scholars but better than that of Hedonists. At graduation, Uncommitted Individualists rated themselves lower than Success Strivers and Scholars on intellectual capacity and understanding science, lower than Success Strivers and Artists on general education and personal development, and lower than Success Strivers on leadership skills as well, but higher than Hedonists across the board (Table 8). Like Artists, Uncommitted Individualists indicated similarly high levels of satisfaction with their college experience and likelihood of recommending their alma mater, falling in the bottom of the five student groups in these regards.

With regard to specific aspects of college life, Uncommitted Individualists indicated high levels of satisfaction with student employment programs, but relatively low levels of satisfaction with academic advising in their major.

Career Aspirations and Future Lifestyle. Upon entering college, Uncommitted Individualists tended to be uncertain of their choice of a major, second only to Artists in this regard. During the course of their undergraduate study, Uncommitted Individualists tended to concentrate in social and natural sciences, and aspire to earn their terminal degrees in business.

When thinking about future lifestyle, Uncommitted Individualists were more likely than Scholars to work for social change. They were less likely than Success Strivers to emphasize the importance of having administrative responsibilities for others, and also less likely than Artists to regard doing creative or expressive work as important.

Scholars

College Activities. During college, Scholars tended to spend less time talking with faculty than Success Strivers. They spent more time working for pay than Hedonists, but less than any other student type. Like Success Strivers, they were more likely than any other type to participate in faculty research and publish or present papers off campus. Also, they were similar to Success Strivers, Artists, and Uncommitted Individualists in that they were more interested in U.S. internships than Hedonists (Scholars 61%, Success Strivers 61%, Artists 67%, Uncommitted Individualists 59%, compared to Hedonists 33%).

Academic Success and Satisfaction. Scholars reported higher levels of college development in intellectual capacity, understanding science, and better academic performance than Hedonists (Table 8). They indicated high levels of overall satisfaction with their undergraduate education and high likelihood of recommending their alma mater, second only to Hedonists in these two areas.

With regard to specific aspects of college life, Scholars indicated high levels of satisfaction with natural sciences and math courses, independent study, foreign language abilities, financial aid, and the financial aid office, but relatively low levels of satisfaction with humanities and arts courses, and interdisciplinary courses.

Career Aspirations and Future Lifestyle. Upon entering college, Scholars aspired to be doctors, business executives/owners, and engineers and were least likely to be writers or artists. During the course of their undergraduate study, they were especially likely to major in engineering (Scholars 22%, Success Strivers 13%, Artists 12%, Uncommitted Individualists 12%, and Hedonists 0%) and natural sciences (Scholars 24%, Uncommitted Individualists 22%, Success Strivers 21%, Hedonists 17%, and Artists 9%) and aspire to earn their terminal degrees in medicine, business, and law.

When thinking about future lifestyle, Scholars were not as enthusiastic as Success Strivers or Artists about working for social change. This finding appeared to be consistent with the values and attitudes Scholars had upon entering college: They scored below average on political interest and social concern. However, they attached more importance to helping others, leaving the world a better place, and being stimulated intellectually than Hedonists (Table 9).

DISCUSSION

In this study, we classified students at highly selective private institutions into meaningful groups based on their traits upon entering college and identified five different, distinctive student types. We then examined each type's background characteristics and college development during the course of their undergraduate study, correlating the college outcomes at one of the institutions with group types to identify trends. As a result, this study generated a number of findings worth noting.

First, during the course of their undergraduate study, students displayed distinctively differing interests in college activities, and these interests corresponded very

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well to their interests at college entry. This correspondence provides some degree of "common sense" validation of the typological schema.

Second, although students of all types were comparable to each other in academic performance as measured by GPA, they reported significant differences in skill development. While Success Strivers reported the highest total gain score, Hedonists reported the lowest total gain score and compared less favorably with Success Strivers and Artists in general education and personal development. Taken as a whole, student college performance was closely related to their academic background. Namely, students with higher SAT scores tended to have significantly higher final average grade.

Third, students of all types tended to change their career expectations away from medicine and engineering as they progressed through college (Figure 1). While Success Strivers were especially likely to be doctors or lawyers, the other groups tended to drift toward other fields, with Artists tending to hope to engage in an expressive or creative field.

Finally, and perhaps most importantly, this study facilitates a discussion of the alignment between institutional programs, on the one hand, and the distinctive needs and concerns of the various kinds of students who attend our institutions on the other. Artists (and Uncommitted Individualists as well) were the least satisfied with their college experience and displayed dissatisfaction in a variety of areas; we also observed these types of students were significantly less likely to attend our institution in the first place, compared to other highly selective institutions in our sample. On the other hand, other student types that attend our institution proportionately more often also reported higher levels of satisfaction and personal and academic gains. Hence we believe that a variety of

student types contributes to the sense of intellectual ferment and excitement on our campus, but we need to consider how best to support all types of students we attract, and this study provides some helpful context for such discussions.

Viewed historically, the student types identified in this study showed great similarity to the student types identified by other studies. For instance, the defining features of "Hedonists" were consistent with Astin's (1993) study: drinking, smoking, and advocating the legalization of marijuana. Hedonists identified in this study also resembled the Wild Ones identified by Newcomb, Koenig, Flacks, and Warwick (1967) in their tendencies for parties. Also, they bore some similarity to the Socializers portrayed by Hackman and Tabor (1976) and by Kuh, Hu, and Vesper (2000). Success Strivers identified in this study resembled in large part Katchadourian and Boli's (1985) Strivers, determined to pursue not only career success but also academic achievement. Artists in this study showed some similarity to the Nonconformists described by Clark and Trow (1966) and had a lot in common with the Creative Individualists portrayed by Newcomb, Koenig, Flacks, and Warwick (1967) and the Artists identified by Hackman and Tabor (1976), Astin (1993), and Kuh, Hu, and Vesper (2000). They had intense interest and engaged frequently in artistic activities. Uncommitted Individualists in some respects corresponded to Katchadourian and Boli's (1985) Unconnected, Astin's (1993) Uncommitted, and Kuh, Hu, and Vesper's (2000) Disengaged. Scholars in this study were similar to Clark and Trow's (1966) Academics, Newcomb, Koenig, Flacks, and Warwick's (1967) Scholars, Katchadourian and Boli's (1985) Intellectuals, Astin's (1993) Scholars, and Kuh, Hu, and Vesper's (2000) Intellectuals, Grinds, and Scientists.

Although this study drew its analytical model from Astin's (1993) study and the student types identified in this study shared major characteristics with those student types portrayed by Astin (1993), it should be noted that this study differed from Astin's study not only in approaches but also in the sample and the number of specific items used to classify students. This study focused on students from highly selective private institutions, while Astin's study used a sample that included students from all types of colleges and universities. These differences may in part explain why this study failed to identify a distinctive group of students as Leaders. Judging by their behavior patterns, Astin's type of Leaders might have been included in the Success Strivers and the Artists identified in this study, respectively. An alternative explanation for the absence of a distinctive group of Leaders might be that the leadership trait was simply too widespread in the comparatively high achieving sample compared to Astin's more normally-distributed national sample. Moreover, the "Success Striver" group identified in this study, although similar to Astin's "Status Striver" type in the emphasis on career success, appeared far more well-rounded and academically oriented. This category of students probably comes closest to the stereotype of the "preprofessional" students, but the Success Strivers' positive attitudes towards politics and art and below average position with respect to hedonism and non-commitment clashes with the simplistic preprofessional stereotype. One thinks of a bright pre-med student who is driven to succeed academically, but takes a genuine interest in Art History classes and plays in the Wind Symphony in addition to taking science courses.

Judging from the findings of this study, all student groups benefited from their college experience to some degree, performed well in terms of GPA at graduation, and

appeared to be generally connected with the educational mission of the university, though perhaps Hedonists least so in all cases. All student groups demonstrated commitment to academic success regardless of their array of interests in other areas. As they cared about political issues and were determined to work for social change, Success Strivers and Artists might become future community leaders. Scholars might value learning more than political issues, but they, like Success Strivers, might use a college degree as a means of gaining career success and financial benefits later in life. Hedonists appeared to need special attention and challenges to divert their tendencies for parties and TV toward greater commitment to educational activities that would help them achieve their academic potential. Less certain about their academic and career goals than other student types, Uncommitted Individualists seemed to need special guidance in setting goals for their academic endeavors as well as career planning. While they contributed a distinctively critical perspective toward the institution and at the same time achieved beyond their experiences, Artists – reflecting their relatively high "non-commitment" scores – may need special challenges and support to help them fully develop their artistic and creative capacities. "Success Strivers" and "Scholars," on the other hand, may need challenges of a different kind, to the extent they may have prematurely committed themselves to paths in life before fully appreciating the range of options that are open to them.

The findings of this study have several practical implications. First, to the extent the findings contribute toward a better understanding of how academic inputs (test scores and grades) relate to achievement outcomes such as gains in abilities, they may assist us in defining and identifying the most desirable applicants in a more nuanced way. Second, the variations between different student types in terms of academic backgrounds, reasons

for college, career plans, and life goals may help focus marketing strategies to attract such students. Third, in addition to the recruitment and selection processes, the findings of this study have implications for our academic and cocurricular programs, in that they suggest areas in which our recruitment and educational goals could be better aligned with the distinctive needs and characteristics of these groups.

In order to assess institutional effectiveness or the long term impact of admissions policies and practices upon student development, however, we need not only to examine student characteristics at the time of entry to college, as we have done in this study, but also to track how students of various types progress toward their academic objectives during college and after graduation. We were able to accomplish this second phase of analysis in this study by identifying students in the CIRP freshman survey who also took the exit survey, and tracking their outcomes tendencies by student type based on a small sample of students in a private research university. As different institutions tend to have different student cultures, the findings of this study are not equally generalizable to all educational settings, though we hope they may be of interest.

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TABLE 1.
Major Student Typologies Published since 1960

Clark & Trow (1966)	Newcomb, Koenig, Flacks, & Warwick (1967)	Keniston (1973)	Hackman & Tabor (1976)	Katchadourian & Boli (1985)	Horowitz (1987)	Astin (1993)	Kuh, Hu, & Vesper (2000)
Academic	Scholars	Professionalist	Scholars Grinds Extreme grinds	Intellectual Striver	Outsider	Scholar	Intellectual Grind Scientist
Collegiate	Social group Leaders	Gentleman-in-waiting Big man on campus	Leaders Athletes Socializers		College man	Leader Hedonist	Collegiate Socializer Conventional
Vocational		Apprentice Underachiever	Careerists Unqualified	Careerist	New outsider	Status striver	
Non-Conformist	Creative individualists Wild ones Political activists	Activist Disaffiliate	Artists Alienated Directionless Disliked	Unconnected	Rebel	Social activist Artist Uncommitted	Artist Individualist Disengaged Recreator

Note: Adapted with permission from Kuh, Hu, and Vesper (2000).

TABLE 2.
Factors on Student Values, Self-Concept, Behaviors, Attitudes, and Expectations

Items	Factor Loading
Political Interest (*Cronbach's α* = .79)	
Influence political structure	.776
Keep up with political affairs	.680
Influence social values	.661
Be a community leader	.641
Take part in student protests	.537
Participate in student government	.511
Promote racial understanding	.590
Develop a meaningful philosophy of life	.370
Participated in student protests or demonstrations	.315
Self-Confidence (*Cronbach's α* = .79)	
Self-confidence (social)	.735
Popularity	.710
Emotional health	.631
Leadership ability	.621
Physical health	.596
Cooperativeness	.462
Public speaking ability	.456
Understanding of others	.429
Play varsity athletics	.339
Artistic Ability (*Cronbach's α* = .73)	
Artistic ability	.727
Create artistic work	.713
Achieve in a performing art	.643
Creativity	.690
Write original works	.620
Played a musical instrument	.424
Academic Achievement (*Cronbach's α* = .62)	
Academic ability	.700
Make at least a "B" average	.578
Self-confidence (intellectual)	.512
Mathematical ability	.520
Get a bachelor's degree	.497
Writing ability	.471
Be satisfied with this college	.458
Drive to achieve	.388
Highest degree planned at any institution	.310
Career Success (*Cronbach's α* = .69)	
Be very well off financially	.677
Obtain recognition from colleagues	.649
Have administrative responsibility	.613
Be successful in own business	.585
Become authority in my own field	.579
Make theoretical contributions to science	.434
Join a social fraternity or sorority	.329

TABLE 2.
Factors on Student Values, Self-Concept, Behaviors, Attitudes, and Expectations
(continued)

Hedonism (*Cronbach's α* = .64)	
Drank wine or liquor	.890
Drank beer	.810
Smoked cigarettes	.612
Marijuana should be legalized	.562
Abortion should be legal	.441
Was bored in class	.222
Social Concern (*Cronbach's α* = .64)	
Participate in volunteer/community service work	.596
Take part in community action program	.558
Help others in difficulty	.544
Performed volunteer work	.451
The Federal government should do more to control handguns	.448
Colleges should prohibit racist/sexist speech	.379
Be involved in programs to clean up the environmental	.351
Felt overwhelmed by all I had to do	.320
Non-Commitment (*Cronbach's α* = .50)	
Change major field	.795
Change career choice	.791
Transfer to another college	.331
Work full-time while attending college	.245
Get a job to help pay for college expenses	.237

Note: 1) The factor analysis was based on student values, self-concept, behaviors, attitudes, and expectations, as displayed in the CIRP Freshman Survey from 1994 to 2002.

2) Altogether 71 survey items common to all freshman survey instruments over the years were identified. Twelve items (i.e., 1) "Felt depressed," 2) "Was a guest in teacher's home," 3) "Tutored another student," 4) "Racial discrimination is no longer a major problem," 5) "Attended religious services," 6) "The death penalty should be abolished," 7) "There is too much concern in the courts for the rights of criminals," 8) "Studied with another student," 9) "Raise a family," 10) "Wealthy people should pay more taxes," 11) "Prohibit homosexual relations," and 12) "drop out permanently") were dropped from factor analysis due to their negative correlation or lack of coherence with other items. The remaining 59 items were used for factor analysis, which resulted in eight factors displayed in the table.

3) The eight factors had eigenvalues ranging from 6.4 to 1.6 and explained variance ranging from 10.8% to 2.7% with 41.6% total explained variance.

TABLE 3.
Final Cluster Centers on Standardized Scores of Eight Student Traits

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Political Interest	-.990	.802	.445	-.237	-.684
Self-Confidence	-.855	.752	-.126	-.727	.197
Artistic Ability	-.079	.122	.846	-.552	-.460
Academic Achievement	-1.259	.534	.157	-.821	.479
Career Success	-.561	.876	-.598	-.240	.124
Hedonism	.474	-.304	.394	-.193	-.148
Social Concern	-1.261	.598	.257	.298	-.663
Non-Commitment	-.479	-.215	.578	.410	-.531

Note: It should be noted that a typology based on student traits assigns individuals to discrete, independent types that represent homogenous groups of individuals with similar traits. Students may have, however, all the traits in varying degrees, and they may score very highly on multiple traits as well.

A brief description of the eight traits follows (see Table 2 for specific items that comprise each scale):

1) "Political Interest" consists of items that display interest in being involved in politics and influencing political decisions and social values from a position of leadership.

2) "Self-Confidence" includes items that demonstrate social confidence, highly rated public speaking and leadership abilities, emotional and physical health.

3) "Artistic Ability" includes items describing self-concept, expectation, and behaviors related to artistic interests and abilities.

4) "Academic Achievement" contains items that depict highly rated academic and mathematical abilities, intellectual self-confidence, drive to achieve, and high aspirations for advanced

degrees.

5) "Career Success" contains items that show interest in career-related status and success.

6) "Hedonism" includes items that depict partying behaviors, academic disengagement, values and attitudes of near term gratification.

7) "Social Concern" contains items that depict values, attitudes, and expectations that illustrate interest in social problems as well as participation in volunteer work and community service.

8) "Non-Commitment" shows expectations of not being fully committed to or engaged in higher education.

TABLE 4.
Selected Student Characteristics by Student Type
at Highly Selective Private Institutions (N = 23,893)

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Gender					
Male	9.8%	24.8%	18.3%	13.9%	33.3%
Female	5.5%	24.4%	27.9%	26.7%	15.5%
Race/Ethnicity					
Caucasian	8.1%	20.1%	27.0%	18.5%	26.4%
African-American	4.2%	43.8%	11.0%	25.8%	15.3%
Asian	6.9%	30.3%	15.5%	24.9%	22.4%
Hispanic	7.5%	32.9%	16.6%	25.7%	17.3%
Other	9.8%	28.4%	24.5%	21.5%	15.9%
Probable Major					
Arts & Humanities	26.1%	10.7%	33.4%	14.1%	10.4%
Biological Sciences	9.4%	16.1%	11.1%	16.6%	14.8%
Business	6.6%	8.8%	1.6%	6.4%	8.4%
Engineering	13.1%	12.7%	3.9%	10.3%	19.1%
Physical Sciences	7.4%	5.2%	5.3%	7.2%	10.3%
Professional	3.9%	10.9%	3.4%	7.3%	7.6%
Social Sciences	17.6%	26.2%	21.9%	21.0%	18.8%
Other Fields	4.4%	2.8%	2.1%	2.5%	3.9%
Undecided	11.4%	6.6%	17.3%	14.6%	6.8%
Career Expectations					
Artist	18.6%	4.4%	28.1%	6.0%	3.6%
Business	16.2%	17.9%	4.2%	13.4%	19.5%
Business (clerical)	0.8%	0.3%	0.1%	0.4%	0.2%
Clergy/Religious Worker	0.2%	0.2%	0.4%	0.3%	0.2%
College Teacher	2.3%	1.6%	5.9%	2.0%	2.4%
Doctor or Dentist	9.5%	27.9%	12.7%	23.5%	23.5%
Education (secondary)	3.1%	0.9%	4.2%	3.1%	1.4%
Education (elementary)	0.5%	0.2%	1.0%	1.3%	0.2%
Engineer	12.5%	8.9%	3.8%	10.8%	13.9%
Farmer or Forester	0.9%	0.2%	1.4%	0.6%	0.1%
Health Professional (non-M.D.)	1.8%	1.6%	1.6%	2.8%	1.3%
Homemaker (full-time)	0.3%	0.1%	0.2%	0.1%	0.1%
Lawyer	6.8%	14.0%	9.3%	9.7%	10.8%
Military (career)	0.2%	0.2%	0.1%	0.1%	0.3%
Nurse	0.4%	0.1%	0.1%	0.4%	0.2%
Research Scientist	7.8%	5.8%	7.0%	8.8%	10.2%
Social/Welfare/Recreation Worker	0.5%	0.4%	1.6%	0.9%	0.1%
Skilled Worker	0.2%	0.1%	0.1%	0.1%	0.1%
Undecided	0.2%	0.2%	0.1%	0.1%	0.1%
Other	0.5%	0.0%	0.2%	0.1%	0.1%

TABLE 4.
Selected Student Characteristics by Student Type (continued)

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Degree Aspirations					
Bachelor's	13.9%	1.7%	3.9%	6.1%	3.3%
Master's	43.8%	23.4%	31.8%	38.3%	30.6%
Doctorate	26.5%	31.5%	43.0%	28.7%	32.1%
Medical	9.3%	26.2%	11.8%	18.9%	22.2%
Law	5.8%	16.8%	9.0%	7.6%	11.5%
Divinity	0.4%	0.4%	0.4%	0.2%	0.2%
Other	0.3%	0.0%	0.0%	0.1%	0.0%
Average High School Grades					
D	0.4%	0.1%	0.0%	0.1%	0.0%
C	0.2%	0.0%	0.1%	0.1%	0.0%
C+	0.4%	0.1%	0.1%	0.1%	0.1%
B-	2.1%	0.4%	0.3%	0.6%	0.3%
B	9.0%	2.4%	2.6%	4.2%	2.0%
B+	15.9%	6.2%	8.8%	10.4%	6.4%
A-	32.2%	22.4%	28.9%	30.4%	23.7%
A or A+	39.8%	68.4%	59.3%	54.2%	67.5%
Mean	6.94	7.55	7.44	7.33	7.56
Weekly Hours Spent on Activities in High School					
Studying/homework	8.1	11.9	10.9	10.9	10.1
Socializing with friends	11.7	11.7	11.6	10.7	11.4
Talking with teachers outside of class	1.7	2.2	2.0	1.8	1.5
Exercising/sports	7.5	9.4	6.9	7.6	9.5
Partying	4.5	3.6	3.1	2.8	3.4
Working for pay	3.8	3.8	3.9	4.0	3.3
Volunteer work	1.3	3.4	2.3	2.5	1.6
Student clubs	3.3	5.4	4.7	3.8	3.7
Watching TV	4.8	3.9	3.1	4.2	4.6
Household/childcare duties	1.3	1.7	1.6	1.7	1.1
Reading for pleasure	2.9	2.6	3.2	2.3	2.4
Verbal SAT Score	684	685	720	685	700
Math SAT Score	698	705	705	697	729
Combined SAT Score	1,382	1,390	1,425	1,382	1,429
Parental Income	$124,521	$122,316	$119,762	$110,922	$137,464
Athletic Status					
Aided athletes	8.0%	14.6%	9.1%	10.0%	9.7%
Unaided athletes	23.0%	30.0%	22.3%	22.2%	31.4%
Non-athletes	69.0%	55.5%	68.6%	67.7%	58.8%
% of *N*	7.6%	24.6%	23.2%	20.4%	24.2%
N	1819	5871	5541	4885	5777

TABLE 5.
Reasons for College

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Reasons for College in General					
Parents wanted me to go	25.4%	34.0%	26.2%	30.5%	27.7%
Couldn't find a job	2.3%	2.1%	1.3%	2.7%	1.3%
Wanted to get away from home	21.0%	18.9%	24.1%	18.9%	16.6%
To be able to get a better job	51.3%	68.3%	50.0%	62.2%	64.8%
To gain a general education	65.4%	89.7%	93.5%	82.1%	79.5%
To improve study skills	27.2%	53.5%	40.4%	43.9%	33.3%
To become a more cultured person	44.2%	76.8%	74.9%	59.8%	51.9%
To be able to make more money	48.8%	65.1%	34.4%	50.0%	62.4%
Role model/mentor encouraged me to go	5.9%	15.0%	9.4%	9.4%	7.2%
Reasons for Attending a Particular Institution					
Relative's wish	6.8%	7.7%	4.5%	7.2%	5.1%
Advice of teacher	4.0%	5.9%	4.7%	4.2%	3.0%
Good academic reputation	73.9%	93.6%	85.0%	85.4%	91.8%
Good social reputation	26.4%	45.6%	39.1%	30.8%	35.5%
Offered financial aid	21.5%	32.8%	28.6%	32.7%	22.4%
Offers special programs	10.3%	30.6%	19.6%	16.5%	15.8%
Low tuition	1.4%	1.6%	0.9%	1.9%	0.5%
Advice of HS guidance counselor	4.8%	9.3%	6.4%	6.6%	5.4%
Advice of private guidance counselor	2.4%	4.2%	2.4%	2.3%	1.7%
Wanted to live near home	4.2%	5.1%	2.8%	5.5%	3.4%
Religious affiliation/orientation	1.6%	3.1%	1.3%	1.8%	1.1%
Size of college	29.7%	45.8%	48.5%	42.3%	36.2%

Note: Respondents to the freshman survey were asked to mark one answer for each possible reason from three response categories: 1 = "Not Important," 2 = "Somewhat Important," and 3 = "Very Important." Only the percentages of "Very Important" were presented in the table.

TABLE 6.
Participation in College Activities

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Music/theater group					
No participation	75.0%	64.3%	42.4%	76.8%	81.4%
Participated - 1st year	16.7%	26.4%	45.5%	13.7%	14.3%
Participated - 2nd year	8.3%	20.7%	45.5%	8.4%	11.4%
Participated - 3rd year	0.0%	17.9%	33.3%	10.5%	9.3%
Participated - 4th year	0.0%	15.7%	30.3%	11.6%	9.3%
Leadership role	0.0%	13.6%	27.3%	8.4%	6.4%
Student government					
No participation	75.0%	83.6%	78.8%	88.4%	85.0%
Participated - 1st year	8.3%	7.1%	12.1%	3.2%	7.9%
Participated - 2nd year	8.3%	10.0%	12.1%	3.2%	8.6%
Participated - 3rd year	8.3%	8.6%	3.0%	4.2%	6.4%
Participated - 4th year	8.3%	5.0%	3.0%	5.3%	5.0%
Leadership role	16.7%	9.3%	9.1%	4.2%	7.1%
Political group					
No participation	83.3%	80.7%	78.8%	83.2%	92.1%
Participated - 1st year	0.0%	11.4%	21.2%	7.4%	5.0%
Participated - 2nd year	0.0%	10.0%	15.2%	6.3%	2.1%
Participated - 3rd year	8.3%	10.0%	6.1%	5.3%	1.4%
Participated - 4th year	8.3%	10.7%	9.1%	9.5%	1.4%
Leadership role	0.0%	7.1%	3.0%	5.3%	1.4%
Honor society					
No participation	58.3%	60.7%	54.5%	68.4%	61.4%
Participated - 1st year	16.7%	22.9%	33.3%	18.9%	22.1%
Participated - 2nd year	16.7%	7.9%	15.2%	12.6%	15.7%
Participated - 3rd year	16.7%	15.7%	18.2%	18.9%	20.7%
Participated - 4th year	25.0%	20.7%	24.2%	17.9%	21.4%
Leadership role	8.3%	2.9%	0.0%	0.0%	4.3%
Student newspaper					
No participation	75.0%	92.1%	84.8%	86.3%	90.0%
Participated - 1st year	8.3%	2.1%	3.0%	7.4%	5.7%
Participated - 2nd year	25.0%	2.1%	6.1%	5.3%	4.3%
Participated - 3rd year	25.0%	2.9%	3.0%	6.3%	3.6%
Participated - 4th year	16.7%	2.9%	6.1%	7.4%	4.3%
Leadership role	16.7%	0.7%	0.0%	5.3%	2.9%
Literary or other magazine					
No participation	83.3%	91.4%	84.8%	90.5%	88.6%
Participated - 1st year	8.3%	0.7%	3.0%	1.1%	2.9%
Participated - 2nd year	16.7%	1.4%	3.0%	2.1%	2.1%
Participated - 3rd year	0.0%	1.4%	6.1%	2.1%	3.6%
Participated - 4th year	8.3%	3.6%	3.0%	3.2%	6.4%
Leadership role	8.3%	1.4%	6.1%	2.1%	1.4%

TABLE 6.
Participation in College Activities (continued)

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Volunteer service					
No participation	41.7%	20.7%	36.4%	18.9%	31.4%
Participated - 1st year	25.0%	55.7%	42.4%	50.5%	42.1%
Participated - 2nd year	33.3%	55.0%	51.5%	55.8%	45.7%
Participated - 3rd year	25.0%	53.6%	48.5%	55.8%	45.0%
Participated - 4th year	8.3%	48.6%	39.4%	50.5%	37.1%
Leadership role	16.7%	15.0%	21.2%	23.2%	10.7%
Religious group					
No participation	75.0%	52.9%	60.6%	64.2%	65.0%
Participated - 1st year	16.7%	37.9%	21.2%	17.9%	24.3%
Participated - 2nd year	8.3%	35.0%	21.2%	22.1%	20.0%
Participated - 3rd year	8.3%	32.9%	21.2%	24.2%	20.0%
Participated - 4th year	8.3%	29.3%	21.2%	22.1%	18.6%
Leadership role	0.0%	14.3%	9.1%	10.5%	10.0%
Fraternity or sorority					
No participation	41.7%	57.1%	51.5%	56.8%	62.1%
Participated - 1st year	33.3%	30.7%	33.3%	28.4%	29.3%
Participated - 2nd year	50.0%	33.6%	45.5%	34.7%	34.3%
Participated - 3rd year	50.0%	34.3%	45.5%	33.7%	33.6%
Participated - 4th year	41.7%	35.7%	42.4%	31.6%	32.9%
Leadership role	50.0%	27.9%	33.3%	18.9%	24.3%
Intercollegiate athletics					
No participation	33.3%	74.3%	66.7%	80.0%	63.6%
Participated - 1st year	50.0%	16.4%	18.2%	14.7%	27.9%
Participated - 2nd year	50.0%	13.6%	9.1%	13.7%	21.4%
Participated - 3rd year	41.7%	11.4%	3.0%	9.5%	14.3%
Participated - 4th year	25.0%	11.4%	9.1%	7.4%	17.1%
Leadership role	8.3%	6.4%	0.0%	4.2%	11.4%

TABLE 7.
Factor Structure for Skill Development Items

	Factor Loadings				
	Intellectual Capacity (Cronbach's α = .83)	General Education (Cronbach's α = .77)	Personal Development (Cronbach's α = .82)	Understanding Science (Cronbach's α = .78)	Leadership Skills (Cronbach's α = .71)
Formulate/create original ideas and solutions	.715				
Think analytically and logically	.714				
Acquire new skills and knowledge on own	.675				
Evaluate and choose courses of action	.566				
Communicate well orally	.523				
Plan and execute projects	.505				
Write effectively	.494				
Acquire In-depth knowledge of field	.470				
Place current problems in perspectives		.689			
Broad knowledge		.681			
Awareness of social problems		.679			
Arts appreciation		.678			
Identify moral and ethical issues		.629			
Foreign language knowledge		.466			
Self-esteem			.691		
Function independently			.668		
Understand self			.660		
Establishment course of action			.644		
Synthesize ideas and info			.467		
Understanding science process				.857	
Evaluation science role				.799	
Use quantitative tools				.677	
Function effectively as a team member					.731
Lead and supervise tasks and groups					.706
Relate well to different races/nations/religions					.600

Note: The five factors had eigenvalues ranging from 8 to 1 and explained variance ranging from 33.4% to 4.2% with 57% total explained variance.

TABLE 8.
Satisfaction, Overall Grade, Average Gains on the Gain Factors, and Sum of Gain by Student Type

	Overall Satisfaction	Likelihood of Recommendation	Overall Average Grade[1]	Average Grade in Major[1]	Skill Development					
					Intellectual Capacity	General Education	Personal Development	Understanding Science	Leadership Skills	Total Gain
Hedonists	4.4	4.5	3.5	3.7	25.0	15.9	14.8	7.5	8.6	70.3
Success Strivers	4.3	4.2	3.9	4.2	26.6	17.7	16.5	8.8	9.5	79.0
Artists	4.2	4.1	4.0	4.4	25.3	17.6	16.3	7.8	8.8	75.9
Uncommitted Individualist	4.2	4.1	3.9	4.1	25.8	16.7	15.9	8.3	8.9	75.8
Scholars	4.3	4.4	4.1	4.3	26.1	15.6	15.4	8.7	8.8	74.8
Total	4.3	4.2	3.9	4.2	26.1	16.7	15.9	8.5	9.0	76.4

Note: [1] These are scores on a six-point scale, with 1 = C or below, 2 = B-/C+, 3 = B, 4 = B+, 5 = A-, and 6 = A.

TABLE 9.
Future Lifestyle

	Hedonists	Success Strivers	Artists	Uncommitted Individualists	Scholars
Working closely with other people	75.0%	85.5%	66.7%	80.0%	74.3%
Secure and stable future	91.6%	82.6%	69.7%	85.3%	84.3%
Social change	16.6%	54.3%	57.6%	47.3%	27.9%
Administrative responsibility	50.0%	47.1%	24.3%	28.0%	33.6%
Work schedule with time for other activities	58.4%	89.1%	90.9%	86.3%	85.7%
Encountering variety of people	33.3%	79.7%	72.8%	79.0%	67.9%
Raising a family	66.6%	85.4%	66.6%	82.1%	78.6%
Helping others	66.7%	89.9%	81.9%	79.0%	67.1%
Being well-off financially	66.7%	64.5%	51.5%	51.0%	63.6%
Recognition from others in own field	50.0%	55.8%	48.5%	32.7%	50.7%
Influence significant political decisions	25.0%	29.7%	15.2%	14.7%	18.6%
Doing creative or expressive work	33.3%	49.3%	81.8%	38.9%	40.7%
Freedom to schedule own day	58.3%	50.8%	39.4%	43.1%	45.0%
Leave the world a better place	41.6%	77.4%	75.8%	61.0%	58.6%
Being stimulated intellectually	91.7%	95.7%	94.0%	92.6%	95.0%
Successful in own business	58.3%	54.8%	39.4%	42.1%	53.3%
Variety of work experiences and challenges	66.6%	86.9%	81.8%	85.3%	81.4%

Note: Student responses to the exit survey were measured on a four-point scale, with 1 = "Not Important," 2 = "Somewhat Important," 3 = "Very Important," and 4 = "Essential." Only the percentages of "Very Important" or "Essential" were presented in the table.

FIGURE 1.
Career Expectations