
Capital Conversion and Accumulation: A Social Portrait of Legacies at an Elite University

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Abstract

Legacies, or students with a family member who graduated from the same college or university, have been the source of much debate. We add to the existing literature by providing a detailed empirical portrait of legacies at a private, selective university across the college years. We examine how legacies are distinctive in their admissions profiles, within-college achievement and post-graduation plans, using data from a panel study of students attending Duke University. We find that legacies enter college with an abundance of economic, cultural and social capital, but also have lower levels of human capital compared to other students with college graduate parents. Due to this human capital deficit, legacies have lower grades in the first college year, but show little academic underperformance in subsequent semesters. Additionally, legacies are less likely to plan to be a medical doctor or engineer and have somewhat lower degree aspirations than other students.

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Admissions practices at American selective colleges and universities regularly consider a range of characteristics beyond academic merit (Fetter, 1995). Affirmative action programs that favor underrepresented minority students are perhaps the most conspicuous preferential admissions policy, as highlighted by the June 2003 Supreme Court rulings (*Gratz v. Bollinger*; *Grutter v. Bollinger*). However, admissions officers routinely give extra consideration to other student traits, for example athletic ability, musical talent, socioeconomic status, unusual life experiences, and expected financial donations (Golden, 2006; Shulman and Bowen, 2001; Zwick, 2002). Admissions preference for legacies – students with parents or close relatives that have alumni ties to the college or university – has featured prominently in recent legal and policy debates (Golden, 2006). These practices serve as challenges to goals of equity and fairness in higher education (Bowen, Kurzweil & Tobin, 2005). A recent survey finds that three-quarters of Americans disagree that legacies should be given special consideration in the admissions process. As a comparison, less than half of these respondents disagree with preferences for minority applicants (Selingo, 2004).

Most research regarding legacies has focused on admissions (e.g., Bowen et al., 2005; Espenshade & Chung, 2005; Espenshade, Chung & Walling, 2004; Howell & Turner, 2004; Karabel, 2005; Karen, 1991). Our study takes a different tack by constructing a social portrait of legacies across the college years. We define legacies as students who report having a family member who graduated from the university, and compare legacies with three meaningful groups of non-legacy matriculants: students who have at least one parent with an advanced degree (e.g., MD, JD, PhD), students who have at least one parent with a (non-advanced) college degree, and students without a college graduate parent. We do not address the issue of admissions

preferences directly. Instead, we add to this debate by exploring the forms of capital legacies bring to campus, and how this influences college experiences and post-graduation plans.

The legacy tradition is most extensive at elite colleges and universities, and has been a fixture at schools like Harvard, Princeton and Yale since their inception. However, preference for legacy applicants first became a contentious issue as new groups sought access to higher education: Jewish and public school graduates after the 1920s, followed by a lessening of racial/ethnic, gender and geographic barriers to postsecondary education after World War II. As the number of qualified applicants to these elite universities increased, so did the level of competition for admission, encroaching upon legacies' traditional advantage (Howell & Turner, 2004, pp. 327-330; Karabel, 2005). Acceptance rates during this period suggest rather accommodating standards for legacy applicants: by 1951, 73 percent of legacies were admitted at Yale, 79 percent at Princeton, and 94 percent at Harvard (Karabel, 2005, p. 602, fn. 126).

Today, the campuses of these elite schools today reflect much greater racial/ethnic, religious, and – to a lesser extent – socioeconomic diversity than during this period of exclusion and unabashed favoritism of alumni children. Still, legacies continue to enjoy an admissions advantage at selective colleges and universities. For example, Karen (1991, pp. 359-362) finds that nearly 40 percent of legacies were admitted into the Harvard College class of 1984, compared to about 14 percent non-legacies.¹ Net of controls for race/ethnicity, sex, test scores and socioeconomic background, legacies are nearly 20 percent more likely to be admitted to selective colleges and universities than other students (Bowen, et al., 2005, pp. 101-108; Espenshade, et al., 2004, p. 1443). It is important to note that not all legacies necessarily receive an admissions preference (Bowen, et al., 2005, pp. 167-171); many legacies have strong academic credentials and were likely admitted on their own merits.

Admissions committees can look favorably upon a legacy's application for a number of reasons. Colleges and universities have an interest in maintaining a sense of tradition, and legacies can help serve this goal (Bowen & Bok, 1998, p. 24; Bowen et al., 2005, pp. 167-171). Taking from the experiences of their alumni parents and relatives, legacies are likely to arrive on campus with greater appreciation for these traditions and institutional loyalty. Further, the high rate of monetary support by legacies and their parents is viewed as crucial to elite schools' financial success (Karen, 1991, pp. 366-7; Liptak, 2008).

Using data from the *Campus Life and Learning* (CLL) project, a panel study of two recent cohorts attending Duke University, this study adds to the existing literature by conducting a detailed examination of legacies throughout the college career. Duke is an appropriate setting to study the experiences of legacies at elite institutions for several reasons. First, Duke is highly comparable to other selective colleges and universities in terms of student background and the legacy share of the student body. Also, Duke has a documented history of admissions preferences for wealthy students, notably "development cases" – students with parents or family members likely to make large future donations (Bowen, et al., 2005, pp. 169-71). As Duke rose in national prominence in recent decades, so did its endowment, as successive presidents targeted children of wealthy families for admission (Golden, 2006, pp. 49-82). Finally, with four waves of data collection and merges of institutional files, including admissions records and transcripts, the CLL provides a level of detail typically unavailable in studies of postsecondary students.

Legacies and Forms of Capital

Families use a myriad of ways to transmit social advantage to the next generation, including biological processes, socialization, and the direct transmission of resources (Erikson &

Goldthorpe, 2002; Featherman & Hauser, 1978). Processes that support academic achievement, such as cognitive development, habits and values, and financial investments in schooling are central in intergenerational transmission (Bourdieu & Passeron, 1977/1990). In this study, we use a conceptualization of forms of capital to understand the experience of legacies at an elite university. More specifically, we examine how legacy status is associated with types of economic, social, cultural and human capital upon matriculation, and how these resources influence academic achievement, college activities and post-graduation plans.

Bourdieu (1983/1986) defines capital as including all forms of power, taking the primary forms of economic, social and cultural capital. These forms of capital share common features, including the capacity to be converted into other resources and material profits. In certain instances, social and cultural capital is convertible into economic capital (money, property rights, etc.) – and vice versa – contributing to the reproduction of social structures and power relations. Social capital refers to the resources available within an individual's social networks (including group memberships and titles). Cultural capital can take the form of dispositions (including tastes and linguistic styles), objective cultural goods (art collections, books, etc.), and academic credentials. In this manner, an admissions preference for legacies is indicative of social capital, in the form of alumni ties and an acknowledged status group membership, facilitating a material advantage: admission into an elite educational institution.

Students and their families work to maintain or enhance their social position by converting these resources into other forms of capital and tangible advantages. An individual's location within social structure is linked to the maintenance and acquisition of capital (Lin, 2001, pp. 33-40). In short, a student from a privileged background likely enters college with not only an abundance of economic capital but also a wealth of social and cultural capital. While the

upper class is similar in respect to volume of capitals possessed, within this broad category are groups distinguished by the relative distribution of economic and cultural capital (Martin, forthcoming; Weininger, 2005). For example, Bourdieu (1973) argues that business executives have an abundance of economic capital but relatively less cultural capital than professionals, who tend to place more emphasis on educational investment for their children.

The notion of cultural capital is among Bourdieu's most popular contributions to American sociology (Sallaz & Zavisca, 2007) and has been widely used in studies of secondary school students (for review, see Lareau & Weininger, 2003). Fewer studies have examined cultural or social capital at the postsecondary level (e.g., Persell, Catsambis, & Cookson, 1992; Zweigenhaft, 1993). During the college application process, students and their families draw on their social and cultural capital in making decisions about which schools to attend, and whether to apply to an elite college or university (McDonough, 1997; Reay, David, & Ball, 2005). Students from privileged backgrounds typically enter college from households where attainment of a college degree is not only encouraged, but expected (Walpole, 2003). Once on campus, these students can draw on this encouragement and successful educational experiences of parents and family members (McClelland, 1990).

Economists such as Becker (1975) and Schultz (1961) describe human capital as the knowledge, skills, health and values that people possess. Investments in human capital, specifically in regards to education, can lead to economic rewards and increased productivity (Coleman 1988). Bourdieu (1989/1996, pp. 275-6) was critical of the human capital perspective, arguing that it failed to recognize the role of educational institutions in processes of cultural and social reproduction. Instead, Bourdieu considers the academic skills, values and abilities that we regard as dimensions of human capital as examples of embodied cultural capital.

Building upon existing studies, we hold that human capital is conceptually distinct from, but often correlated with other forms of capital. Dimensions of human capital that are germane to academic performance include: (1) academic and intellectual skills; (2) self-esteem, academic self-confidence, and identity; and (3) academic effort (Spenner, Mustillo, & Martin, 2008). Academic skills include competencies with understanding or applying theories, and written or oral expression (Pascarella & Terenzini, 2005, pp. 65-76). Self-esteem, or an individual's assessment of their own worth, is also linked to the academic performance of postsecondary students (e.g., Massey, et al., 2003; Morgan & Mehta, 2004). Rosenberg and colleagues (1995) suggest that specific self-esteem, or academic self-confidence, is more closely related to academic achievement than global self-esteem. In addition, closer identification with a good student identity could yield stronger academic performance and greater investments of time and energy (Burke, 2004; Reitzes & Burke, 1980). Finally, college students vary in the levels of academic effort and these variations are positively associated with academic performance and skill acquisition (Astin, 1993; Pascarella & Terenzini, 2005, pp. 119-120). A number of studies use hours spent studying as an indicator of academic effort, and generally find small-to-modest positive effects on academic performance (e.g., Rau & Durand, 2000; Schuman, et al., 1985).

Research Questions

In this study, we compare legacies with three groups of students with non-alumni parents, distinguished by parents' postsecondary degree: students with at least one parent with an *advanced degree* (e.g., MD, JD, PhD), students with at least one parent with another *college degree* (including Master's degree), and students without a college graduate parent (*no degree*).

Building upon the existing literature and previous studies of legacies at selective colleges and universities, this study addresses three primary research questions:

1. How are legacies distinct from other admissions groups in their admissions profiles?

In some respects, we expect legacies to portray the history of elite colleges and universities and resemble the student bodies from earlier decades and generations. In this way, legacies are more likely to be white, Protestant and US citizens and from affluent households, and more likely to have attended private high schools. Legacies, exhibiting social capital through an institutionalized tie to campus, are likely similar to other students with college graduate parents in terms of economic and cultural capital available in the household during the high school years.

Several recent studies show admissions preferences for legacies in terms of standardized test scores (e.g., Bowen et al., 2005; Espenshade et al., 2004; Howell & Turner, 2004). We expect that that legacies will not only exhibit lower test scores than other students with college graduate parents, but also relative deficits along other dimensions of human capital, including academic skills, self-concept, identity and effort.

2. How do legacies compare with other student groups in terms of academic achievement and experiences across the college years?

The few studies that have examined legacies' academic achievement suggest a degree of underperformance early in college (Massey & Mooney, 2007; Spenner et al., 2005) but little underperformance by the end of college (Bowen et al., 2005. p. 171). In explaining this early underperformance, we explore the forms of capital with which students enter college. In particular, we focus on the accumulation of human capital across the college years.

3. How are legacies different from other groups in their post-graduation educational and occupational plans?

Students' plans for after graduation, taken at the end of the fourth college year, offer a final view of how legacies may differ from other students. Selective colleges and universities serve as important links from the educational system to elite occupations (Katchadourian & Boli, 1994). Net of individual student characteristics and other institutional factors, attending a selective college or university has a positive impact on future earnings (Kingston & Smart, 1990), as well as modest positive effects on occupational status (Pascarella & Terenzini, 2005, pp. 467-476). By examining the experiences of legacies attending an elite university, this study illustrates a pathway towards often high status, high paying occupations for an elite status group.

Data and Methods

Research Design

The *Campus Life and Learning* (CLL) project involves a multi-year, prospective panel study of two consecutive cohorts of students admitted to Duke University and who accepted admission (incoming classes of 2001 and 2002). Duke is a private research university located in Durham, North Carolina with a total undergraduate enrollment of about 6,000 students. The design randomly selected about one-third of white students, about two-thirds of Asian students, all black and Latino students, and about one-third of bi- and multi-racial students, based upon self-reported racial ethnic status as found on the admission application form.

While this study was not designed to be representative of all postsecondary students, the CLL is comparable to other studies of selective colleges and universities (Bryant, Spenner & Martin, 2007, pp. 92-95). Duke University was included as one of the eight most selective institutions, defined as having a combined average SAT score (mathematics and verbal) of 1300 or higher, in the *College and Beyond* (Bowen & Bok, 1998, p. 337). Comparisons with the

national *Cooperative Institutional Research Program* suggest that the CLL is similar to other private, selective colleges and universities (Martin, forthcoming). In contrast to studies that examine samples from multiple institutions, this study is designed to capture the rich details of students' experiences at a single institution with multiple data points and merges of various types of institutional data, often unavailable in other studies.

The final sample for both cohorts included 1536 members (602 whites, 290 Asians, 340 blacks, 237 Latinos, and 67 bi- or multi-racial). Respondents were surveyed in the summer preceding college matriculation. Refusals were low at 1.8 percent. About 77 percent of sample members completed the mail questionnaire, and over 96 percent of these respondents provided signed release to their institutional records. Our analytic sample for this paper includes students who responded to the first survey wave and were not missing on key demographic variables ($n = 1178$). Of those that completed the pre-college survey, 77 percent also responded to the first year survey, 75 percent to the second year survey and 67 percent to the fourth year survey.² The Appendix provides comparisons of possible non-response and drop-out/attrition bias, and we conclude that the effects are quite small (cf. Spenner et al., 2005). All models and estimates use probability weights to reflect the sampling of racial ethnic groups.³

Measures

Table 1 provides descriptive statistics and measurement notes for variables and alpha coefficients for scales. Students were assigned to one of four groups based on their response to the pre-college survey. *Legacies* (20.4% of students) have a parent or family member who graduated from Duke University. This operational definition is somewhat broader than that used during the admissions process, when legacy students are defined as applicants who have a grandparent, parent or sibling who have attended or are attending Duke. Our definition is similar

to others found in the literature on admissions preferences (e.g., Bowen et al., 2005; Espenshade et al, 2004). As a comparison, Howell and Turner (2004, p. 333) show that about 15 percent of enrolled first year students in the incoming class of 2001 were children or stepchildren of alumni. Golden (2006, pp. 117-144) describes that over one-fifth of Notre Dame freshman are alumni children, as well as 10-15 percent of students at Ivy League and other elite schools.

[TABLE ONE ABOUT HERE]

Students with non-alumni parents were classified by the level of educational attainment of the student's more educated parent (if available for both parents). *Advanced degree* students (31.5%) have at least one parent with an advanced (e.g., JD, MD, PhD) degree, *college degree* students (40.6%) have at least one parent with a college degree (including master's degree), and *no degree* (7.6%) students have parent with less than a bachelor's degree.

Information for students' *race/ethnicity*, *citizenship* and *high school type* was collected from the pre-college survey and, if missing, from institutional records.⁴ Other socioeconomic characteristics collected in the pre-college survey include: *religious affiliation*, *intact family*, *household income*, *parents' occupation* and *financial support* for college expenses. Also, respondents were asked about their and their parents' involvement in *cultural activities*, such as visiting art galleries, museums, the opera, ballet, music concerts, movie theaters, science centers and zoos. Measures of cultural resources present in the home during the high school years include *number of books* and a scale of *educational resources*, such as a personal computer, access to the internet or a quiet place to study.

Measures of pre-college academic achievement include *SAT score* (mathematics and verbal tests), taken from institutional files, and *advanced placement credit*. Measures of human capital, collected in the pre-college and college years surveys, include: *hours spent studying*,

self-reported *academic skills*, global *self-esteem*, *self-assessed ability*, *academic self-concept*, and the importance of *good student identity* and *proving-self academically*.

Academic outcomes collected from institutional records and official transcripts include semester *grade point averages*, *final/declared major field area*, and *graduation with honors*.

The fourth year survey includes detailed questions regarding students' *future plans*, both in the fall immediately following graduation and about five years after leaving Duke, such as *expected income* and *degree*, *occupational aspirations*, and the *use of family contacts*.

Results

Pre-College Student Profiles

To what extent are legacy students advantaged in their pre-college student profiles and form a distinct subgroup on campus? Table 2 describes socioeconomic characteristics for the four student groups: legacies and students with non-alumni parents with advanced degree, college degree or no degree. Compared to other students, legacies are more likely to be white, US citizens and Protestant, and are more likely to have attended private high schools.⁵ Additionally, legacies come from households that are considerably more affluent than students with no degree parents, and slightly more advantaged than students with college degree parents. The annual pre-college household income of legacies (about \$240,000/year) is nearly triple that of students with no degree parents and is about 44 percent higher than students with college degree parents. Related to the higher levels of household education and income, over three-quarters of legacies have a parent with a high-status occupation, compared to about 62 percent of students with college degree parents and less than one-third of students with no degree parents.

[TABLE TWO ABOUT HERE]

Although students with advanced degree parents are more likely to be black, Latino or Asian than legacy students, they are quite similar to legacies on other background measures. For example, legacies and students with advanced degree parents expect family members to cover nearly three-quarters of their college expenses, while students with no degree parents expect to rely on grants, loans and scholarships for over two-thirds and family members for about one-quarter of expenses. Like legacies, students with advanced degree parents are more likely to come from high income, two-parent households, and are more likely to have attended private high schools than other students.

Legacies and students with advanced degree parents also come from families that possess high levels of cultural capital. During the middle school and high school years, these students and their parents participate more frequently in cultural activities than other students. In analysis not shown, we examine differences for each activity individually. Legacies and students with advanced degree parents participate more often in “highbrow” (e.g., visiting art galleries and museums, attending the opera, ballet or symphony) and “popular” activities (e.g., going to the movie theater and music concerts, and attending sports events) than other students. While Bourdieu (1973) emphasized that high status groups have exclusive tastes and a greater familiarity with “highbrow” cultural practices, contemporary high status Americans are active consumers of both “highbrow” and “popular” cultural forms (Alderson et al., 2007; Peterson & Kern, 1996). Not only do legacies and students with advanced degree parents enter college with more experience in cultural activities, their households also contain more books and other educational resources. About four-fifths of legacies had more than 200 books present in the home during high school, compared to about two-thirds of students with college degree parents and one-third of students with no degree parents.

Legacies and students with advanced degree parents come from similarly advantaged backgrounds, characterized by an abundance of financial and cultural resources.⁶ However, relative to other students with college graduate parents, legacies have somewhat lower levels of pre-college achievement and human capital (Table 3). The average SAT score for legacies is about 40 points lower than students with advanced degree parents, and about 12 points lower than students with college degree parents. About 44 percent of legacies have SAT scores below their class average, compared to about 32 percent of students with advanced degree parents.⁷ Although this test-score gap between legacies and other students with college graduate parents is significant, it is small in comparison to other groups that are shown admissions preferences. Espenshade, Chung and Walling (2004) estimate the admissions preference shown to different student groups at elite universities in terms of SAT points on a 1600-point scale. Net of other factors, black applicants receive a 230 point advantage, Latino applicants get 185 points, recruited athletes get 200 points, and legacy applicants receive the equivalent of a 160 point boost (Espenshade et al., 2004, p.1444). Among college matriculants in the CLL, about 89 percent of black students and about 69 percent of Latino students have test scores below their class average.⁸ Legacies, like other students with college graduate parents, are more likely to report receiving AP credit than students with no degree parents.

[TABLE THREE ABOUT HERE]

Legacies enter college with somewhat lower levels of human capital, especially in comparison to other students with college graduate parents. Legacies report the lowest levels of pre-college academic skills and ability, and consider a good student identity to be least important. Legacies report lower levels of academic self-confidence than students with

advanced degree parents, and expect to earn a lower first year GPA than other students with college graduate parents.

Table 4 presents results from multinomial logistic regression models predicting the likelihood of being in the other student groups versus legacies, displaying odds-ratios. We examine how the family background and high school achievement variables shown in Tables 2 and 3 are associated with legacy status relative to the three groups of non-legacy students (parents with an advanced degree, college degree, or no degree). This analytic approach can help assess relative associations between groups and across variables, but these results should not be interpreted as a causal model due to problems of endogeneity. For example, having a parent who graduated from an elite university likely predicts several of the independent variables, such as family income and cultural capital. Overall, these results confirm that legacy students form a distinct high-status group on campus who are predominately white, Protestant and come from more affluent households yet have somewhat lower levels of pre-college achievement. In this manner, legacies largely represent constituencies who controlled elite colleges and universities before the expansion of American higher education and concurrent rise of meritocracy in the early- and mid-twentieth century (Jencks & Riesman, 1962/2002; Karabel, 2005).

[TABLE FOUR ABOUT HERE]

Legacies are less likely to be black, Latino or Asian than other student groups, particularly in comparison to students with advanced degree parents. Legacies are also less likely to be Catholic than other students, and less likely to be Jewish than students with advanced degree parents. Family income and the cultural capital variables do not significantly distinguish between legacies and students with advanced degree parents, although legacies are less likely to have a parent with a high-grade professional occupation (Model 1). Legacies are more likely

than students with college degree (Model 2) and no degree parents (Model 3) to have higher household incomes, parents with professional occupations, and have a greater share of college expenses covered by family members. There are no significant differences on the cultural capital variables between legacies and students with advanced degree or college degree parents.

Parents' cultural activities and having more than 200 books in the home are negatively associated with the odds of being in the no degree (versus legacy) group. Legacies have significantly lower SAT scores and expected first year grades than other students with college graduate parents, especially students with advanced degree parents.

Thus, legacies arrive on campus forming a distinct status group that is characterized by an abundance of economic, cultural and social capital. In this way, legacies largely resemble the profile of students with advanced degree parents, although legacies are more likely to be white or Protestant. However, relative to other students with college graduate parents, legacies enter college with lower levels of human capital, as shown by lower standardized test scores, lower expected grades, lower levels of self-assessed skills and abilities, and less attachment to the good student identity or providing oneself academically.

Academic Achievement and College Activities

How do legacies compare with other students in terms of academic achievement across the college career? Figure 1 displays semester grade point averages across the four college years, by legacy status and parents education. In the first semester, legacies score over two-tenths of a letter grade lower than students with advanced degree parents and about one-tenth lower than other students with college degree parents. After the first college year, legacies largely close this gap with students with advanced degree parents and beyond the first year achieve higher grades in each semester than students with college degree parents.

[FIGURE ONE ABOUT HERE]

What explains legacies' early academic underperformance and then rather substantial gains in semester grades across the first two college years? Table 5 presents results from OLS regression predicting the effects of student background and college activities on first year cumulative GPA. After two semesters of study, students with advanced degree parents score about one-tenth of a letter grade higher than students with college degree parents, about one-eighth of a letter grade higher than legacies, and about one-quarter higher than students with no degree parents (Model 1). Model 2 adds measures of student background, high school achievement and major field area. Replicating well-known national differences at selective colleges and universities (Bowen & Bok, 1999; Massey et al., 2003), black students score about .28 of a letter grade lower than white students. Net of other characteristics, female students have first year grades that are nearly .09 of a letter grade higher than males. A one-standard deviation increase in SAT score is associated with about .17 of a letter grade increase, and having received AP credit is associated with about .09 of a letter grade increase. Relative to natural science and engineering majors, social science majors score about one-ninth of a letter grade higher and humanities majors score about one-seventh of a letter grade higher. With the addition of these socioeconomic and high school achievement variables, the effects of being a student with college degree and no degree parents become insignificant. However, net of other student background characteristics, legacies still score nearly one-tenth of a letter grade lower than students with advanced degree parents.

[TABLE FIVE ABOUT HERE]

Including measures of pre-college human capital reduces the effect of legacy status by about 23 percent and to insignificance (Model 3). While the achievement gap for students with

college degree or no degree parents is attributable to differences in socioeconomic background and high school achievement, legacies appear disadvantaged by their pre-college human capital deficit. A one-unit increase in self-assessed ability in challenging high school courses is associated with about .07 of a letter grade increase. Hours spent studying has a positive effect on first year grades, although small relative to other measures. Self-esteem ($t = 1.87$) and the importance of a good student identity ($t = 1.86$) also have small, positive effects on first year grades but fail to reach significance thresholds. Overall, few students in the CLL exhibit severe academic underperformance – less than two percent of students have cumulative GPAs below 2.0 (“C” average) after the first year – or low absolute levels of human capital. Still, relative to other students with college graduate parents, legacies achieve lower grades early in the college career and this is explained by legacies’ lower levels of pre-college human capital.

[TABLE SIX ABOUT HERE]

Just as students show higher levels of achievement as they move across the college years, there is a steady accumulation of human capital from the first to the fourth year across all student groups (Table 6). As in pre-college, in the first year legacies attach less importance to proving themselves academically. In each college year, legacies consider a good student identity to be less important than other students with college graduate parents, although this identity becomes less important for other groups by the fourth year. After the fourth year, legacies not only have semester GPAs similar to other students with college graduate parents but also report similar levels on other dimensions of human capital. All student groups report similar levels of self-esteem and time spent studying in each college year.⁹ Across the college years, legacies largely close the gap in reported academic skills, and between-group differences are not significant by

the fourth year. For each college year, legacies report similar if not slightly higher levels of ability and self-confidence as students with college degree parents.

Post-Graduation Plans

How are legacies distinct from other students at the end of the college career? Table 7 describes final academic outcomes and post-graduation plans. As discussed above, after the first year legacies and other students with college graduate parents are increasingly similar in terms of achievement and college activities, and this pattern continues with immediate post-graduation plans. Compared to other students, legacies are less likely to major in the natural sciences or engineering and are more likely to major in humanities. Over one-third of students with advanced degree parents graduated with honors, compared to about one-quarter of legacies and students with college degree parents and about one-sixth of students with no degree parents. Bowen, Kurzweil and Tobin (2005, p. 171) report little academic underperformance by legacies – roughly 1.4 percentage points in class rank – in the *College and Beyond* 1995 entering cohort. Our results generally confirm this finding. Legacies are less likely to graduate with honors and achieve somewhat lower grades in each semester than students with advanced degree parents, the group that legacies most resemble in their socioeconomic profile. After the first college year, legacies show similar levels of academic achievement as students with college degree parents.

[TABLE SEVEN ABOUT HERE]

Post-graduation plans were collected in the spring semester of the fourth college year and provide a final view of how legacies may differ from other student groups. Legacies are somewhat less likely than other students to report plans for attending school full-time in the fall after graduation, and more likely to report plans other than school or work. While there are few significant differences for immediate post-graduation plans, legacies are more likely to report the

use of family or personal contacts for their post-graduation plans. About two-thirds of legacies report the use of personal contacts, compared to about 45 percent of students with advanced degree parents and students with no degree parents.

Plans for five years after graduation reveal stronger differences between legacies and other student groups. Legacies have lower degree expectations and are less likely to expect a high-status professional occupation than other student groups. For example, about 44 percent of legacies plan to obtain an advanced degree, compared to about 60 percent of students with advanced degree and no degree parents and about 52 percent of students with college degree parents. Legacies are not significantly different from other students in plans for being a lawyer or executive/manager. Legacies are less than half as likely to plan on being a medical doctor compared to students with advanced degree and no degree parents, and about one-fourth as likely to plan on being an engineer compared to students with college degree and no degree parents.

In sum, as a result of their relative human capital deficit at admissions, legacies have lower grades than other students with college graduate parents early in the college career. After the first year, legacies have similar levels of achievement and show comparable levels across several human capital measures. Compared to the socioeconomic and pre-college profiles, there are few differences in post-graduation plans, although legacies are less likely to plan on being a medical doctor or engineer and have lower degree aspirations than other students.

Discussion

Soon after the Supreme Court's *Grutter* decision, an ultimately failed Senate bill included a reporting requirement to draw attention to admissions policies that favor students from wealthy families. As a challenge to the idea of a meritocratic admissions process, this proposal was

designed to counter opponents of affirmative action programs that preference underrepresented minorities (Golden, 2006, pp. 227-258). As part of the Higher Education Act (S.1793, 108th Cong., §302), this proposal called for postsecondary institutions to report the number, racial ethnic group, sex and Federal Pell Grant eligibility of legacies and students who were admitted as part of an early decisions program. In high profile moves, Harvard and Princeton recently dropped their early decisions programs, arguing that they put low-income and minority students at a disadvantage (Finder & Arenson, 2006, p. A1; Finder, 2006, p. A16). Admissions preference for legacies remains a contentious issue, with some commentators and politicians calling for preferences to be abolished (Bowen et al., 2005, pp. 167-171). At present, there appears little impetus for private elite colleges and universities to abandon legacy preferences.

Our contribution to this broader discussion is to provide a detailed empirical portrait of legacies attending an elite institution. Comparable to figures available at other selective colleges and universities, about one-fifth of students in the CLL have a parent or family member who also attended Duke, and over five-sixths of these legacies are white. While some of these legacies likely received an admissions preference, many others were admitted on their own academic merits. While our data do not provide information on Pell Grant eligibility, legacies were least likely of the four groups to report an interest in receiving financial aid, and expect to rely on parents and family members for most college expenses. Less than five percent of legacies enter college from households with a reported annual income of \$35,000/year or less, compared to about 40 percent of students with no degree parents.¹⁰

Our study primarily examined three areas: pre-college admissions profiles, within-college academic achievement and post-graduation educational and occupational plans. Legacies are most distinctive as a status group in their pre-college profiles, largely representing constituencies

that monopolized higher education at the beginning of the twentieth-century: affluent white Protestants. However, upon matriculation legacies have a human capital deficit relative to other students with college graduate parents, evidenced by lower test scores and lower levels across six of seven human capital measures.

During the first college year, legacies achieve lower than expected grades and this underperformance is attributable to legacies' pre-college human capital deficit. By the fourth year, legacies achieve grades that are comparable to other students with college graduate parents, and show similar levels of human capital across most dimensions. Legacies consider a good student identity to be less important than other students, and are also less likely to major in the natural sciences or engineering. There are few differences between student groups in immediate post-graduation plans, although legacies are less likely to plan to become a medical doctor, engineer or scientist, and have lower degree aspirations. Across the college career, legacies exhibit an activation of social capital: first, through college admission despite somewhat lower test scores, and finally in the prevalent use of personal contacts for post-graduation plans.

Legacies appear undeterred by their relative underperformance during the first year, and go on to achieve high grades in subsequent semesters.¹¹ While our results show that legacies' human capital deficit at admissions explains this early underperformance, it is likely that legacies draw upon their other resources and forms of capital. During high school, legacies have an abundance of cultural capital available in the home, including educational resources and books, and images of academic success in the family (Bourdieu, 1973; McClelland, 1990). By definition, legacies have family members that have an educational credential from an elite university, and thus likely grew up in households that cultivate the development of the tastes, styles of speech, and interpersonal skills rewarded by educational institutions (Lareau, 2003).

Further, legacies have the unique resource of being able to turn to family members who have direct experience at the university – and established social networks – as alumni.

In other ways, legacies reveal a benefit afforded by an abundant supply of forms of capital: flexibility to be uncertain about future plans. In their pre-college profiles and post-graduation plans, legacies are more likely to be uncertain about their educational and occupational plans. Pre-college, over 39 percent of legacies do not know their expected major field, compared to about 28 percent of students with college degree parents and 31 percent of students with advanced degree parents. At the end of the fourth year, legacies are most likely to report plans other than school or work for the fall immediately following graduation, and are least likely to report future occupational plans.

What are the costs and benefits of admissions preferences for legacies at elite colleges and universities? An admissions preference for legacies entails a cost to diversity, although campuses today are far more diverse and inclusive than half a century ago (Karabel, 2005). Over the past two decades, the legacy advantage has declined slightly at selective colleges and universities, while the admissions boost for recruited athletes has increased (Espenshade et al., 2004, pp. 1442-1443; Shulman & Bowen, 2001). Howell and Turner (2004) determine that the costs to diversity will continue to decline over the coming decades, due to changes in the racial ethnic composition of the alumni and legacy pools. Espenshade and Chung (2005, pp. 299-300) estimate that eliminating affirmative action programs would reduce acceptance rates for underrepresented minority students at selective universities by as much as two-thirds (cf. Bowen & Bok, 1998). However, eliminating preferences for legacies or athletes would only modestly increase the share of admitted students from minority groups (Espenshade & Chung, 2005).

Our data only allow comparisons among matriculants at an elite university, and we cannot make empirical judgments about the students who would have been accepted had there not been an admissions preference for legacies. Still, our results have several distinct implications. On the one hand, by the end of college legacies achieve relatively high academic standards and largely close their pre-college human capital deficit. About one-quarter of legacies in our study graduated with honors, a similar proportion as students with college degree parents but lower than students with advanced degree parents. Further, legacies could provide benefits that we were unable to consider in our study. For example, legacies can help colleges and universities meet financial objectives as well as maintain a sense of historical continuity or tradition on campus (Bowen et al., 2005).¹²

On the other hand, legacies attach the least importance to being a good student across all college years, and are least likely to major in the natural sciences or to plan to become a medical doctor, engineer or scientist. An admissions preference for legacies clearly advantages an already advantaged group, and serves to undermine goals of equity in higher education and at elite institutions in particular. Legacies comprise a distinct high status group, characterized by an abundance of economic, cultural and social capital. As a group, legacies largely replicate the socioeconomic profile of past generations of students, and are disproportionately white, Protestant and from affluent households.

Admission into elite colleges and universities has never been based on purely academic or meritocratic criteria. While affirmative action programs that favor underrepresented minority students are more visible and generate more controversy, admissions committees regularly give preferences to other groups of applicants, notably recruited athletes and legacies. To date, there has been little attention in the research literature to legacies after students have received their

admissions decision and arrived on campus. A contribution of this study is to not only provide a detailed description of legacies' pre-college socioeconomic profile, but also shed light on the conversion and accumulation of forms of capital across the college career.

¹ Duke University Admissions considers legacies as applicants with parents, grandparents or siblings who have attended or are attending Duke. During the application process, legacies' applications are subject to an additional round of review. While legacy status is just one of many factors are taken into consideration by reviewers, legacies have on average double the chances of admission compared to non-legacy applicants (Dagger, 2006).

² Overall response rates to the in-college waves, administered by mail and web (senior year only), were 71 percent for the first year, 65 percent for the second year and 59 percent for the senior year.

³ In the comparisons included in Tables 2, 3, 6 and 7, significant between-group differences ($p < .05$) are determined from one-way ANOVA for continuous and ordinal dependent variables, and chi-squared tests for dichotomous and categorical variables.

⁴ For the actual placement of respondents in racial ethnic categories, Census-type questions were used that measure first whether or not the respondent is Hispanic and then elicit a racial category. Virtually all "Hispanic" respondents also reported their race as white, so this group was classified as Latino. Other groups were placed on the basis of this question, which includes bi- and multi-racial options.

⁵ Espenshade and Chung (2005, p. 301) report that 76 percent of legacies are white in the 1997 cohort of the *National Study of College Experience*. Howell and Turner (2004, p. 341) show that 87 percent of legacies are white in a recent cohort at the University of Virginia. In comparison, 84 percent of legacies are white in the CLL.

⁶ About 51 percent of legacies have at least one parent with an advanced degree, and about 11 percent of legacies have two parents with an advanced degree. To consider whether this could account for similarities between legacies and students with advanced degree parents, we decompose legacies into two groups. Compared to other legacies, legacies with at least one advanced degree parent are more likely to have a parent with a high-grade professional occupation (87.9% versus 66.5%), expect greater family contribution for expenses (79.2% versus 67.0%), participate in more cultural activities (17.2 versus 16.3) and have more educational resources in the home (9.65 versus 9.28). No other variables included in Tables 2, 3 or 4 show significant differences between the legacy groups.

⁷ In results not shown, we examine differences on Admissions Committee ratings, collected from institutional files. Legacies had the lowest scores of the four student groups for achievement and personal qualities, and lower scores than other students with college graduate parents for curriculum, essay, test scores, and recommendation letters.

⁸ The CLL does not include information about athletes who were recruited during the admissions process. Other items ask students about extracurricular participation, including intercollegiate athletics, in each college year. In the first year, about 56 percent of intercollegiate athletes had SAT scores below their class mean.

⁹ In results not shown, we examine other measures of time use during the college years. There are no significant differences between the four student groups in the time spent each week in class, doing homework or studying. Students spend about 24 hours/week in class or studying during the first year, and about 20 hours by the fourth year. During the first year, legacies spend significantly more time socializing with friends and partying than other students. Legacies spend about 17.1 hours/week socializing and partying during the first year, compared to about 16.2 hours for other students with college graduate parents and about 12.6 hours for students with no degree parents.

¹⁰ About 46 percent of legacies reported an interest in receiving financial aid in their college admissions form, compared to nearly half of students with advanced degree parents, about 59 percent of students with college degree parents and about two-thirds of students with no degree parents. While there is no absolute family income threshold to determine Pell Grant eligibility (other factors include assets, household size and number of family members in college), about 73 percent of students at private universities during the 2003-2004 academic year with a pre-college family income of less than \$35,000/year received a Pell Grant (Berkner, et al., 2005).

¹¹ Although not a major focus of our study, as noted by one reviewer it is noteworthy that students with no degree parents appear undeterred by this potential obstacle. By the end of college, students with no degree parents have semester GPAs that are converging to the level of other groups, are likely to plan to attend graduate school and have high final degree aspirations.

¹² While admissions preferences for legacies are often justified by private institutions' reliance on alumni support, this argument can be less than persuasive considering the large and growing endowments enjoyed by many elite colleges and universities (Karabel, 2005, pp. 550-551). Duke University's endowment, currently valued at about \$5.9 billion, is less than one-fifth the market value of Harvard's (\$34.6 billion) and about one-quarter the size of Yale's (\$22.5 billion), although over 11 times greater than the average for national postsecondary institutions (\$0.5 billion) (NACUBO, 2007).

Appendix: Dropout Bias, Non-Response Bias and Missing Data

Registrar's Office data provided enrollment information for students in each survey year. Non-enrollment might occur for multiple reasons including academic or disciplinary probation, medical or personal leave of absence, dismissal, transfer or involuntary withdrawal. At the end of the first year, fewer than one percent ($n = 12$) of students were not enrolled, and about five percent ($n = 81$) of students were not enrolled at the end of the senior year. Tests for differences were conducted using admissions file information of those enrolled versus not enrolled at the end of each survey year. The test variables included racial ethnic group, SAT verbal and mathematics score, high school rank, admission committee rating, parental education, financial aid applicant, type of high school attended and citizenship. Only two differences were significant ($p < .05$). After the first year, dropouts had higher SAT-verbal scores, and after the senior year, dropouts had a lower admissions rating.

Similar tests were conducted comparing respondents and non-respondents for each wave, using the same variables as above plus major field, legacy admission status, and previous semester GPA. Most variables reveal no significant or only sporadic differences. Other variables show differences that are more systematic. Non-respondents at each wave have lower SAT scores (mathematics: 9-15 points; verbal: 18-22 points), are less likely to be from a public high school and somewhat more likely to be from a private (non-religious) high school, and have lower grades in the previous semester by about one-quarter of a letter grade. Non-respondents have slightly higher educated parents at waves one and three.

Mean imputation was used for variables with less than 5 percent missing (Cohen et al. 2003). For SAT scores (10.8% missing), missing values were replaced with a regression predicted score using ACT scores, high school rank and admissions committee ratings. A prediction equation explained more than 60 percent of the variance in SAT scores, suggesting that minimal bias will be present when using the imputed variable (Landerman et al. 1997).

References

- Alderson, A.S., Junisbai, A., & Heacock, I. (2007). Social status and cultural consumption in the United States. *Poetics*, 35, 191-212.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Babcock, P., & Marks, M. (2008). The falling time cost of college: evidence from half a century of time use data. Unpublished manuscript. Department of Economics, University of California, Santa Barbara.
- Becker, G.S. (1975). *Human capital: a theoretical and empirical analysis, with special reference to education*. New York: National Bureau of Economic Research.
- Berkner, L., Wei, C.C., He, S., Lew, S., Cominole, M., & Siegel, P. (2005). *2003-04 National Postsecondary Aid Study (NPSAS:04): Undergraduate Financial Aid Estimates for 2003-2004 by Type of Institution* (NCES 2005-163). US Department of Education. Washington, DC: National Center for Educational Statistics.
- Bourdieu, P. (1973). Cultural reproduction and social reproduction. In R. Brown (ed.), *Knowledge, education, and cultural change* (pp. 71-112). London: Tavistock.
- Bourdieu, P. (1983/1986). The forms of capital. In J.G. Richardson (ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). Westport, CT: Greenwood Press.
- Bourdieu, P. (1989/1996). *The state nobility*. Stanford, CA: Stanford University Press.
- Bourdieu, P., & Passeron, J.C. (1977/1990). *Reproduction in education, society, and culture*. Thousand Oaks, CA: Sage Publications.
- Bowen, W.G., & Bok, D. (1998). *The shape of the river: long term consequences of considering race in college and university admissions*. Princeton, NJ: Princeton University Press.
- Bowen, W.G., Kurzweil, M.A., & Tobin, E.M. (2005). *Equity and excellence in American higher education*. Charlottesville, VA: University of Virginia Press.
- Burke, P.J. (2004). Identities and social structure: the 2003 Cooley-Mead award address. *Social Psychological Quarterly*, 67, 5-15.
- Bryant, A.Y., Spenner, K.I., & Martin, N.D. (2007). *The campus life and learning project: a report on the college years* (95pp). Durham, NC: Duke University.
- Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. Aiken. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*, 3rd ed. Mahwah, NJ: Lawrence Erlbaum.

- Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Dagger, J. (2006, January/February). Top of the crop: inside admissions. *Duke Magazine*, vol. 92 (1). Retrieved September 21, 2008, from <http://www.dukemagazine.duke.edu/dukemag/issues/010206/crop-admissions1.html>
- Erikson, R., & Goldthorpe, J.H. (2002). Intergenerational inequality: a sociological perspective. *The Journal of Economic Perspectives*, 16, 31-44.
- Espenshade, T.J., & Chung, C.Y. (2005). The opportunity cost of admission preferences at elite universities. *Social Science Quarterly*, 86, 293-305.
- Espenshade, T.J., Chung, C.Y., & Walling, J.L. (2004). Admission preferences for minority students, athletes, and legacies at elite universities. *Social Science Quarterly*, 85, 1422-1446.
- Featherman, D.L., & Hauser, R.M. (1978). *Opportunity and change*. New York: Academic Press.
- Fetter, J.H. (1995). *Questions and admissions: reflections on 100,000 admissions decisions at Stanford University*. Stanford, CA: Stanford University Press.
- Finder, A. (2006, September 16). Princeton stops its early admissions, joining movement to make process fairer. *New York Times*, p. A.16.
- Finder, A., & Arenson, K.W. (2006, September 12). Harvard ends early admission, citing barrier to disadvantaged. *New York Times*, p. A. 1.
- Golden, D. (2006). *The price of admission*. New York: Crown Publishing Group.
- Howell, C., & Turner, S.E. (2004). Legacies in black and white: the racial composition of the legacy pool. *Research in Higher Education*, 45, 325-351.
- Jencks, C., & Riesman, D. (1968/1992). *The academic revolution*. New Brunswick, NJ: Transaction Publishers.
- Karabel, J. (2005). *The chosen: the hidden history of admission and exclusion at Harvard, Yale, and Princeton*. New York: Mariner Books.
- Karen, D. (1991). 'Achievement' and 'ascription' in admission to an elite college: a political-organizational analysis. *Sociological Forum*, 6, 349-380.
- Katchadourian, H., & Boli, J. (1994). *Cream of the crop: the impact of an elite education in the decade after college*. New York: Basic Books.

- Kingston, P.W., & Smart, J.C. (1990). The economic pay-off of prestigious colleges. In P.W. Kingston & L.S. Lewis (eds.), *The high status track* (pp. 147-174). Albany: State University of New York Press.
- Landerman, L.R., Land, K.C., & Pieper, C.F. (1997). An empirical evaluation of predictive mean matching method for imputing missing values. *Sociological Methods and Research*, 26, 3-33.
- Lareau, A. (2003). *Unequal childhoods: class, race and family Life*. Berkeley and Los Angeles: University of California Press.
- Lareau, A., & Weininger, E.B. (2003). Cultural capital in educational research: a critical assessment. *Theory and Society*, 32, 567-606.
- Lin, N. (2001). *Social capital: a theory of social structure and action*. New York: Cambridge University Press.
- Liptak, A. (2008, January 15). A hereditary perk the founding fathers failed to anticipate. *New York Times*, p. A12.
- Martin, N.D. (forthcoming). Quantifying social class: A latent clustering approach. In K. Robson & C. Sanders (Eds.), *Quantifying theory: Bourdieu* (chap. 13). Springer Press.
- Massey, D.S., Charles, C.Z., Lundy, G.F., & Fischer, M.J. (2003). *The source of the river: the social origins of freshmen at America's selective colleges and universities*. Princeton, NJ: Princeton University Press.
- Massey, D.S., & Mooney, M. (2007). The effects of America's three affirmative action programs on academic performance. *Social Problems*, 54, 99-117.
- McDonough, P.M. (1997). *Choosing colleges: how social class and schools structure opportunity*. Albany: State University of New York Press.
- Morgan, S.L., & Mehta, J.D. (2004). Beyond the laboratory: evaluating the survey evidence for the disidentification explanation of black-white differences in achievement. *Sociology of Education*, 77, 82-101.
- National Association of College and University Business Officers. (2007). *2007 NACUBO Endowment Study*. Washington, DC: NACUBO.
- Pascarella, E.T., & Terenzini, P.T. (2005). *How college affects students: a third decade of research*. San Francisco: Jossey-Bass.
- Persell, C.H., Catsambis, S., & Cookson, P.W. Jr. (1992). Differential asset conversion: class and gendered pathways to selective colleges. *Sociology of Education*, 65, 208-225.

- Peterson, R.A., & Kern, R.M. (1996). Changing highbrow taste: from snob to omnivore. *American Sociological Review*, 61, 900-907.
- Rau, W., & Durand, A. (2000). The academic ethic and college grades: does hard work help students to 'make the grade'? *Sociology of Education*, 73, 19-38.
- Reay, D., David, M.E., & Ball, S. (2005). *Degrees of choice: social class, race and gender in higher education*. Sterling, VA: Trentham Books.
- Reitzes, D.C., & Burke, P.J. (1980). College student identity measurement and implications. *Pacific Sociological Review*, 23, 46-66.
- Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: different concepts, different outcomes. *American Sociological Review*, 60, 141-156.
- Sallaz, J.J., & Zavisca, J.R. (2007). Bourdieu in American sociology, 1980-2005. *Annual Review of Sociology* 33, 21-41.
- Schuman, H., Walsh, E., Olson, C., & Etheridge, B. (1985). Effort and reward: the assumption that college grades are affected by quantity of study. *Social Forces*, 63, 945-966.
- Selingo, J. (2004). U.S. public's confidence in colleges remains high. *The Chronicle of Higher Education*, 50(35), A12-13.
- Schultz, T.W. (1961). Investment in human capital. *American Economic Review*, 51, 1-17.
- Shulman, J.L. & Bowen, W.G. (2001). *The game of life: college sports and educational values*. Princeton, NJ: Princeton University Press.
- Spenner, K.I., Buchmann, C., & Landerman, L.R. (2005). The black-white achievement gap in the first college year: evidence from a new longitudinal case study. In D. Bills (Ed.), *Research in Social Stratification and Mobility* (pp.187-216). Amsterdam: Elsevier.
- Spenner, K.I., Mustillo, S., & Martin, N.D. (2008). Within-college human capital and racial ethnic differences in academic performance. Unpublished manuscript. Department of Sociology, Duke University.
- Zweigenhaft, R.L. (1993). Prep school and public school graduates of Harvard: a longitudinal study of the accumulation of social and cultural capital. *Journal of Higher Education*, 64, 211-225.
- Zwick, R. (2002). *Fair game? The use of standardized admissions tests in higher education*. New York: RoutledgeFalmer.

Table 1
Description of Variables and Measurement Notes

Variable name	Measurement/description (source)	mean ^a	(s.d.)	range
Legacy	1 = have a family member that graduated from Duke (pre-college survey)	.20		0 – 1
US Citizen	1 = US Citizen, native born and naturalized (pre-college)	.93		0 – 1
Religious affiliation:	Current religious affiliation (pre-college)			
Protestant		.21		0 – 1
Catholic		.49		0 – 1
Jewish		.10		0 – 1
Other		.28		0 – 1
Intact family	1 = both parents lived in home, senior year of high school (pre-college)	.83		0 – 1
Household income	Student reported pre-tax household income, \$USthousand, coded from 11 discrete categories to the category midpoint (pre-college)	202.81	(153.15)	10 – 550
Parents social class:	EGP class category, 4-class schema; coded from the three-digit US Census 1990 Occupation Classification (pre-college) following the convention provided in the Supplemental Appendix to Morgan & McKerrow (2004)			
I (high grade professionals)		.72		0 – 1
II (lower grade professionals)		.16		0 – 1
III (other nonmanual workers)		.07		0 – 1
IV (manual workers)		.02		0 – 1
Missing		.03		0 – 1
High school type:	Type of primary high school attended during senior year (pre-college)			
Public		.68		0 – 1
Private (non-religious)		.11		0 – 1
Religious		.21		0 – 1
Parents cultural activities (alpha = .687)	Three item scale of parents' activities (visit art museum, attend opera/ballet, read) during student's middle school years (pre-college)	8.19	(2.32)	3 – 12
Students cultural activities (alpha = .634)	Six item scale of students' activities (visit art museum, attend opera/ballet, movie theater, zoo/science center, concert, sport event) during senior year of high school (pre-college)	16.14	(3.12)	6 – 24
Educational resources (alpha = .704)	Ten item scale of educational resources present in home during senior year of high school (pre-college)	9.21	(1.46)	2 – 10
SAT score	Scholastic aptitude test, mathematics and verbal (institutional files)	1403.56	(119.83)	820 – 1600

Received AP credit	1 = yes (pre-college)	.84		0 – 1
Expected first year GPA	A = 4.0, B = 3.0, C = 2.0, D = 1.0 (pre-college)	3.52	(.31)	2.0 – 4.0
Academic skills	Eight item scale of self-assessed abilities: remembering factual knowledge, understanding fundamental concepts, applying knowledge, analyzing arguments, synthesizing information, conducting research, oral expression, and writing skills			
Pre-college (alpha = .758)		32.10	(3.83)	20 – 40
First year (alpha = .785)		29.06	(3.79)	8 – 40
Second year (alpha = .788)		29.21	(3.86)	8 – 40
Fourth year (alpha = .790)		31.90	(3.91)	8 – 40
Self-assessed ability	Ability comparisons to other students in most challenging class (1 = very much below average, 5 = very much above average); the pre-college measure combines items for the last challenging mathematics and literature courses.			
Pre-college		8.18	(1.35)	2 – 10
First year		3.24	(.86)	1 – 5
Second year		3.25	(.90)	1 – 5
Fourth year		3.38	(.82)	1 – 5
Self-esteem (global)	Sum of 3 items from the Rosenberg self-esteem scale (pre-college, items 1 and 2 only): extent to which respondent agrees that 1) on the whole, satisfied with self, 2) do not feel useless at times [reflected] and 3) do not wish could have more self respect [reflected] (Rosenberg et al., 1995)			
Pre-college (alpha = .499)		7.51	(1.82)	2 – 10
First year (alpha = .660)		10.28	(2.71)	3 – 15
Second year (alpha = .707)		10.54	(2.82)	3 – 15
Fourth year (alpha = .701)		10.87	(2.79)	3 – 15
Academic self confidence	Confidence in most challenging class (1 = not at all confident, 5 = extremely confident); the pre-college measure combines items for the last challenging mathematics and literature courses			
Pre-college		5.95	(1.40)	2 – 10
First year		2.52	(.98)	1 – 5
Second year		2.53	(.99)	1 – 5
Fourth year		2.76	(1.01)	1 – 5
Good student identity	Importance of good student identity to overall identity (1 = not at all important, 5 = extremely important)			
Pre-college		4.35	(.81)	1 – 5
First year		4.11	(.88)	1 – 5
Second year		3.97	(.95)	1 – 5
Fourth year		3.97	(.96)	1 – 5
Prove self academically	Importance of proving self academically (1 = not at all important, 5 = extremely important)			
Pre-college		4.42	(.83)	1 – 5
First year		4.23	(.78)	1 – 5
Hours/week studying	Hours spent studying during a typical (non-exam) week; for the college years measures, converted from six categories to category midpoint			
Pre-college		13.94	(8.57)	0 – 40

First year		10.75	(5.18)	0 – 18
Second year		10.59	(5.13)	0 – 18
Fourth year		9.53	(5.34)	0 – 18
Major field of study (final)	First year major (expected) from the pre-college survey; final major from institutional files/transcripts			
Natural sciences/engineering		.36		0 – 1
Social sciences		.47		0 – 1
Humanities		.17		0 – 1
Graduation with honors	Cum laude, magna cum laude or summa cum laude (institutional files)	.27		0 – 1
Final (cumulative) GPA	A = 4.0, B = 3.0, C = 2.0, D = 1.0 (institutional files)	3.40	(.41)	1.0 – 4.0
Used family/personal contacts	1 = used personal contacts for post-graduation plans (fourth year survey)	.53		0 – 1
Primary activity next fall:	Plans for fall immediately after graduation (fourth year survey)			
Attend school		.37		0 – 1
Work		.53		0 – 1
Other		.09		0 – 1
Highest degree in five years:	Plans for about five years after graduation (fourth year survey)			
Bachelor's		.11		0 – 1
Master's (incl. MBA)		.35		0 – 1
Advanced (MD, JD, PhD)		.54		0 – 1
Occupation in five years::	Plans for about five years after graduation; categories from class-I of the EGP schema (fourth year survey)			
Lawyer		.18		0 – 1
Executive/manager		.17		0 – 1
Medical doctor		.16		0 – 1
Professor/scientist		.10		0 – 1
Engineer		.05		0 – 1
Other occupation		.16		0 – 1
Occupation plans missing		.18		0 – 1

^a Mean estimates using proportional weights to reflect the sampling of racial ethnic minority students

Table 2

Student Background Characteristics (means), by Legacy Status and Parents Education

	Legacies n = 188	Non-alumni parent(s) with:		
		Advanced degree n = 358	College degree n = 500	No college degree n = 132
Race/ethnicity:				
White *	.84	.67	.64	.42
Black *	.03	.06	.08	.26
Latino *	.04	.08	.09	.16
Asian *	.07	.17	.15	.13
Other	.02	.03	.04	.05
US Citizen *	.98	.93	.92	.85
Religious affiliation:				
Protestant *	.52	.26	.42	.41
Catholic *	.11	.23	.23	.31
Jewish *	.07	.18	.08	.02
Other	.30	.33	.27	.26
Intact family *	.87	.87	.81	.68
Household income (\$thousand) *	240.53	253.03	167.51	82.84
Parents social class (EGP):				
I (high grade professionals) *	.77	.91	.62	.32
II (lower grade professionals) *	.14	.05	.24	.21
III (other nonmanual workers) *	.05	.02	.08	.25
IV (manual workers) *	.01	.00	.02	.15
Parents social class missing *	.03	.02	.04	.07
% of college expenses covered by:				
Parents/family members *	.73	.74	.54	.26
Grants/loans *	.11	.11	.23	.44
Scholarships *	.09	.08	.15	.23
Work *	.03	.03	.04	.05
High school type:				
Public *	.61	.64	.72	.80
Religious	.13	.10	.11	.11
Private (non-religious) *	.26	.25	.17	.09
Parents cultural activities *	8.75	8.71	7.85	6.28
Students cultural activities *	16.71	16.38	15.90	14.82
Educational resources in home *	9.47	9.30	9.14	8.54
More than 200 books in home *	.80	.76	.66	.34

Note: Weighted estimates; * p < .05 (two-tailed tests)

Source: *Campus Life and Learning*

Table 3

Pre-College Achievement and Admissions Profiles (means), by Legacy Status and Parents Education

	Legacies	Non-alumni parent(s) with:		
		Advanced degree	College degree	No college degree
SAT (mathematics + verbal) score *	1393.34	1432.97	1404.87	1318.22
SAT score below cohort mean *	.44	.32	.41	.74
Received AP credit *	.87	.85	.84	.72
Expected first year GPA *	3.46	3.57	3.53	3.40
<i>Pre-college human capital</i>				
Academic skills *	31.39	32.46	32.30	31.40
Self-assessed ability *	3.95	4.16	4.10	4.14
Self esteem (global)	7.30	7.68	7.50	7.42
Academic self confidence *	2.95	3.05	2.94	2.85
Good student identity *	4.19	4.40	4.38	4.42
Prove self academically	4.33	4.44	4.45	4.51
Hours/week spent studying	13.65	14.19	13.99	13.33

Note: Weighted estimates; * p < .05 (two-tailed tests)

Source: *Campus Life and Learning*

Table 4

Multinomial Logistic Regression of Other Student Groups versus Legacies on Student Background and Pre-College Achievement

	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>	
	<i>Advanced degree vs. legacies</i>		<i>College degree vs. legacies</i>		<i>No degree vs. legacies</i>	
	Odds-ratio	(z-score)	Odds-ratio	(z-score)	Odds-ratio	(z-score)
Race/ethnicity:						
Black	8.539 *	(5.59)	2.767 *	(2.80)	2.488	(1.84)
Latino	2.605 *	(2.42)	2.055	(1.87)	1.931	(1.28)
Asian	2.546 *	(2.59)	1.456	(1.02)	1.065	(.10)
Other	2.281	(1.40)	2.294	(1.49)	2.745	(1.43)
US Citizen	.417	(-1.70)	.310 *	(-2.29)	.149 *	(-2.74)
Religious affiliation:						
Catholic	4.880 *	(4.92)	2.446 *	(2.99)	3.073 *	(2.53)
Jewish	5.470 *	(4.26)	1.778	(1.36)	.910	(-.09)
Other	1.602	(1.74)	.755	(-1.09)	.792	(-.59)
Intact family	1.070	(.23)	1.030	(.10)	1.133	(.32)
Household income (\$thousand)	1.001	(.96)	.999 *	(-1.96)	.994 *	(-2.22)
Parents social class (Class I)	3.281 *	(3.91)	.602 *	(-2.13)	.297 *	(-3.54)
% of college expenses covered by:						
parents/family members	.925	(-.20)	.466 *	(-2.18)	.177 *	(-3.11)
High school type:						
Public	1.050	(.19)	1.118	(.45)	1.150	(.30)
Religious	.642	(-1.15)	.720	(-.88)	.691	(-.62)
Parents cultural activities	1.078	(1.19)	.917	(-1.54)	.778 *	(-3.15)
Students cultural activities	.972	(-.71)	.978	(-.58)	.975	(-.46)
Educational resources in home	.897	(-1.08)	.916	(-.87)	.910	(-.81)
More than 200 books in home	.859	(-.56)	.677	(-1.55)	.342 *	(-2.84)
Expected first year GPA	2.575 *	(2.53)	1.892 *	(1.96)	.784	(-.48)
SAT score	1.005 *	(3.90)	1.002 *	(2.13)	.998	(-1.20)
Received AP Credit	.690	(-1.16)	.821	(-.65)	.928	(-.19)
<i>Pseudo-R²</i> .191						
<i>χ² (df)</i> 415.68 (63)						

Note: Weighted estimates; * p < .05 (two-tailed tests)

Source: *Campus Life and Learning* (n = 1178)

Reference categories: white, Protestant, private high school

Table 5

OLS Regression of First Year Cumulative GPA on Legacy Status, Student Background and Pre-College Human Capital

	Model 1		Model 2		Model 3	
	coeff.	(s.e.)	coeff.	(s.e.)	coeff.	(s.e.)
Legacies	-.129 *	(.047)	-.093 *	(.044)	-.072	(.043)
Parents - college degree	-.092 *	(.035)	-.060	(.034)	-.050	(.034)
Parents - no degree	-.247 *	(.053)	-.050	(.052)	-.040	(.053)
Race/ethnicity:						
Black			-.279 *	(.046)	-.285 *	(.046)
Latino			-.062	(.040)	-.072	(.039)
Asian			-.006	(.040)	-.014	(.040)
Other			-.054	(.059)	-.067	(.057)
Female			.086 *	(.029)	.079 *	(.029)
US Citizen			-.081	(.049)	-.082	(.050)
Household income (\$thousand)			.000	(.000)	.000	(.000)
High school type:						
Public			.015	(.037)	.008	(.038)
Religious			-.026	(.054)	-.027	(.055)
SAT score			.001 *	(.000)	.001 *	(.000)
Received AP Credit			.091 *	(.042)	.082 *	(.042)
Major field of study:						
Social sciences			.110 *	(.035)	.134 *	(.036)
Humanities			.142 *	(.059)	.176 *	(.061)
Other/undecided			.048	(.035)	.073 *	(.035)
<i>Pre-College Human Capital</i>						
Academic skills					-.005	(.004)
Self-assessed ability					.066 *	(.026)
Self esteem (global)					.016	(.009)
Academic self confidence					.009	(.023)
Good student identity					.035	(.019)
Prove self academically					-.009	(.018)
Hours/week spent studying					.005 *	(.002)
Constant	3.358 *	(.027)	1.301 *	(.204)	.816 *	(.263)
R^2	.021		.199		.221	

Note: Weighted estimates; * p < .05 (two-tailed tests)

Source: *Campus Life and Learning* (n = 1178)

Reference categories: parents-advanced degree, white, private high school, natural science major

Table 6

Within-College Human Capital (means), by Legacy Status and Parents Education

	Legacies	Non-alumni parent(s) with:		
		Advanced degree	College degree	No college degree
Academic skills				
First year *	28.73	29.48	29.13	27.78
Second year *	28.88	29.48	29.39	28.05
Fourth year	31.65	32.01	32.10	31.00
Self-assessed ability				
First year *	3.18	3.40	3.19	2.98
Second year *	3.25	3.42	3.16	3.11
Fourth year	3.31	3.48	3.35	3.37
Self esteem (global)				
First year	10.11	10.43	10.34	9.76
Second year	10.44	10.82	10.50	10.05
Fourth year	10.74	11.08	10.82	10.58
Academic self confidence				
First year *	2.48	2.70	2.44	2.25
Second year	2.55	2.60	2.51	2.37
Fourth year	2.76	2.74	2.79	2.78
Good student identity				
First year *	3.86	4.18	4.16	4.19
Second year *	3.81	4.06	4.02	3.81
Fourth year *	3.72	4.13	4.00	3.81
Prove self academically				
First year *	4.06	4.22	4.29	4.30
Hours/week spent studying				
First year	10.35	10.68	10.92	11.15
Second year	11.00	10.46	10.50	10.55
Fourth year	9.42	9.85	9.36	9.34

Note: Weighted estimates; * $p < .05$ (two-tailed tests)Source: *Campus Life and Learning*

Table 7

Final College Academic Outcomes and Post-Graduation Plans (means), by Legacy Status and Parents Education

	Legacies	Non-alumni parent(s) with:		
		Advanced degree	College degree	No college degree
<i>Final/declared major field of study:</i>				
Natural sciences/engineering *	.25	.41	.37	.37
Social sciences	.50	.44	.49	.43
Humanities *	.25	.15	.14	.20
Graduation with honors *	.24	.35	.23	.17
Final (cumulative) GPA *	3.38	3.46	3.38	3.28
<i>Plans for the fall after graduation</i>				
Used family/personal contacts *	.65	.45	.54	.46
<i>Primary activity:</i>				
Attend school	.30	.40	.38	.42
Work	.55	.52	.53	.57
Other *	.15	.08	.09	.01
<i>If attending school, degree pursuing:</i>				
Bachelor's	.07	.05	.12	.12
Master's (including MBA)	.20	.16	.16	.21
Professional (MD, JD, PhD)	.73	.79	.71	.67
<i>If working:</i>				
Expected income (\$thousand)	44.02	45.51	42.56	41.98
<i>Plans for five years after graduation</i>				
<i>Highest degree earned or in progress:</i>				
Bachelor's *	.17	.07	.13	.03
Master's	.39	.32	.35	.37
Professional *	.44	.61	.52	.60
<i>Occupation:</i>				
Lawyer	.17	.19	.18	.17
Executive/manager	.16	.17	.18	.11
Medical doctor *	.10	.22	.12	.21
Professor/scientist	.08	.09	.11	.15
Engineer *	.02	.03	.08	.08
Other occupation	.20	.16	.14	.18
Occupation plans missing *	.25	.13	.18	.11

Note: Weighted estimates; * p < .05 (two-tailed tests)

Source: *Campus Life and Learning*

Figure 1
Semester Grade Point Averages, by Legacy Status and Parents Education

