Educational Expectations of Asian American Youths: Determinants and Ethnic Differences

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The study presented here explored three factors that may explain why distinct Asian American groups have higher educational expectations than do whites: favorable socioeconomic and background characteristics, demonstrated academic ability, and parents' high expectations. With data from the National Educational Longitudinal Study, the authors used linear and logistic multivariate regression models to examine these differences in educational expectations. The analyses indicated that although all Asian American ethnic groups have higher expectations than whites, the higher educational expectations of Asian American groups that are well assimilated into U.S. society are principally influenced by socioeconomic and demographic factors. Parental expectations generally explain a large portion of children's high educational expectations for all Asian American groups.

Discussions of Asian Americans in both the popular and academic literature have pointed to their high educational achievement and its importance to their economic success. Asian American students score consistently higher on standardized tests of mathematics ability, have higher grade point averages, and attend four-year colleges at higher rates than do students of other races (Caplan, Choy, and Whitmore 1991; Hsia 1988; Sanchirico 1991; Zhou and Bankston 1994). Asian American adults as a group have attained more education than have other minorities or whites (Barringer, Takeuchi, and Xenos 1990; Hirschman and Wong 1986). Largely as a result of their higher educational achievement, the average family incomes of some Asian American groups surpass that of whites (Lee and Edmonston 1994). Because of these educational and economic successes, Asian Americans are often referred to as a "model minority" (Hurh and Kim 1989; Kao 1995).

In exploring the model-minority image, researchers have compared Asian American children's academic performance to that of whites, using test scores and grades as indicators (X. Chen 1996; Fejgin 1995; Kao 1995; Portes and Rumbaut 1990). However, they have paid little attention to explaining Asian American children's higher *motivation* to achieve, although large differences in educational expectations between Asian Americans and whites have been observed for some time. For example, the National Center for Education Statistics (1984) reported that in 1980, 61.5 percent of Asian American but only 37.7 percent of white high school seniors expected to attend a four-year college. Our research fills this gap in knowledge by examining the determinants of Asian Americans' high educational expectations. Furthermore, few studies have carefully explored the ethnic differences among Asian Americans that the model-minority label masks. To explore the model-minority characteriza-

tion more thoroughly, we explicitly recognize both similarities *and* diversity among Asian American groups.

In our research, we considered a few important commonalities among Asian Americans. First, Asian Americans of all ethnic groups maintain a marginal presence in U.S. society because of their small numbers. Second, as a group, they are physically and culturally distinguishable from whites and other minorities in this country. Third, many Asian Americans are recent immigrants and speak their native languages at home. Fourth, even after several generations, Asian American groups maintain distinct ethnic identities. Because of their marginal status in U.S. society, Asian Americans of all ethnic groups may view education as the best means to overcome discrimination and other barriers to achieving high social status (Xie and Goyette 1998).

However, these similarities do not fully characterize the causal factors underlying the higher educational expectations of each Asian American ethnic group compared to whites. As Kao (1995), X. Chen (1996), and others have recognized, the term Asian American does not represent a homogeneous group. Apart from cultural differences among the many Asian nations, Asian Americans of different ethnic groups immigrated to the United States under various circumstances and immigration laws. In addition, those who were born in the United States or have lived here for a long time differ in many respects from those who recently immigrated (Kao and Tienda 1995; Rong and Grant 1992; Xie and Goyette 1997).

Asian Americans of various ethnicities may have higher educational achievement than whites, but their paths to this achievement can differ radically. Whereas ethnicity has been used as a control variable in other research, we made the study of ethnic differences among Asian Americans a central concern by exploring the diverse reasons across ethnic groups for the Asian-white gap in educational expectations.

Our empirical work was based on an analysis of data from the first two waves of the National Educational Longitudinal Study (NELS), 1988–90, conducted by the National Opinion Research Center for the National Center for Education Statistics (NCES 1990, 1992). We used both linear and logistic regression models to explain differences in educational expectations between Asian American ethnic groups and whites in the 10th grade. We took advantage of the longitudinal nature of the data by predicting educational expectations in the 10th grade from explanatory factors measured in both the 8th and 10th grades.

EXPLANATORY FACTORS

In our study, we explored three factors that may explain Asian Americans' higher educational expectations: (1) socioeconomic and other background characteristics, (2) tested academic ability, and (3) parents' educational expectations for children. Previous research on Asian American achievement has typically treated Asian Americans as a homogeneous group, implying that the success of Asian Americans is a function of their common characteristics that transcend ethnic boundaries.[1] However, Asian Americans, as a category, represent a variety of cultural heritages and immigration experiences. Therefore, not only must they be disaggregated into ethnic groups, but the explanatory power of the three factors should be considered separately for each ethnic group. In the following section, we discuss each factor and suggest how its relevance may vary for different Asian American groups.

Background Characteristics

It has been proposed that much of the educational success of Asian American children in the United States can be attributed to their favorable family background characteristics (Kao 1995). For example, Asian Indian, Japanese, Chinese, Filipino, and Korean American adults surpass whites in average educational attainment (Hsia 1988). Furthermore, the average family incomes of Japanese, Chinese, South Asian, and Filipino Americans are higher than that of whites. Status-attainment research (see Blau and Duncan 1967; Featherman and Hauser 1978;

Sewell and Hauser 1975) has long established that parents' socioeconomic status (SES) has strong and positive effects on children's achievement. Thus, differences in the socioeconomic and other family background characteristics of Asian Americans and whites constitute a plausible explanation for the gap in educational expectations between Asian American and white youths.

However, the socioeconomic approach is unsatisfactory as a *general* framework for explaining the educational achievement of Asian American children. As Lee (1994) pointed out, poverty rates are high among Chinese, Vietnamese, Laotian, Cambodian, and Hmong Americans. Approximately 14 percent of Chinese Americans lived in poverty in 1989, compared to 10 percent of whites. The average family incomes of Southeast Asians tend to be low, ranging from $41,243 for Vietnamese families to $26,378 among Laotian and Hmong families in 1989, compared to $54,733 for whites (U.S. Bureau of the Census 1993). In this article, we address this drawback explicitly by supplementing the socioeconomic approach with other explanations and varying the applicability of this approach with different ethnic groups.

Tested Academic Ability

Another explanation for differences in educational success between Asian Americans and whites focuses on tested academic ability. On the basis of a comprehensive review, Hsia (1988) reported that as a whole, Asian Americans appear to exhibit greater aptitude for mathematics and only slightly lower verbal aptitude than whites. For example, Asian American students' average score of 519 on the 1984 quantitative SAT test ($SD = 127$) was .40 of a standard deviation above the white students' score of 487 ($SD = 114$).

Popular attention to the observed differences in test scores between Asian Americans and whites has led to much speculation and debate about their sources. Although a few observers have contended that the differences are innate (Herrnstein and Murray 1994), most researchers (see, for example, Fischer et al. 1996) have attributed the discrepancies in measured ability to variations in parents' SES, children's access to educational resources at home and in schools and communities, and culture (C. Chen and Stevenson 1995; Flynn 1991; Kao 1995). It is plausible that the high educational expectations of Asian Americans positively affect their test scores (Chan, Schmitt, DeShon, Clause, and Delbridge 1997).[2]

Although the causes of differences in ability continue to be debated, we contend that measured differences in ability should affect children's educational expectations. For example, children who cannot complete grades at the same pace as their peers may become discouraged about their competence in school and thus may have low educational expectations. In contrast, children who score high on proficiency tests develop high levels of educational expectations based on positive reinforcements from others and their own perceptions of the feasibility of continuing in school (Sewell, Haller, and Portes 1969). Thus, higher tested ability should lead to higher educational expectations, all else being equal.

For children who live in poverty, tested ability may be one of the few avenues to higher education. Children who cannot afford tuition may rely on scholarships for higher education, which are often tied to high scores on such standardized tests as the SAT (Manski and Wise 1983). Therefore, we argue that tested ability may play a role in explaining the high educational expectations of groups with higher concentrations of people who are poor than whites, such as Chinese and Southeast Asians.

Parents' Expectations

In a series of studies (see Stevenson and Stigler 1992), Stevenson and his associates proposed that a major difference between the United States and the Asian countries (China, Japan, and Taiwan) they studied is that Asian parents generally have much higher academic expectations than do U.S. parents. These researchers contended that cultural beliefs about the connection between effort and educational success are manifested in Asian American parents' educational expectations for their school-age children. They reasoned

that since Asians in these countries believe that educational goals are achievable through effort and are not solely determined by ability, parents typically push their children to attain as much education as possible.

C. Chen and Stevenson (1995) suggested that this cultural difference may also account for high educational achievement among Asian American children. A recent study by Hao and Bonstead-Bruns (1998) supported this notion. These researchers suggested that values learned in Asian countries are fostered by integrated ethnic communities and that these values underlie parents' expectations for children, as well as the expectations of the children themselves. In addition, Asian American parents may view education as an effective channel of upward mobility for their children and thus place a high instrumental value on educational attainment (Xie and Goyette 1998).

The high educational expectations of Asian American parents are also consistent with the view that recent immigrants, regardless of ethnicity, face structural barriers to mobility, such as language difficulties and discrimination, and may draw on attitudes toward education to overcome these obstacles. For example, Ogbu (1991) theorized that regardless of race, "voluntary" minorities (those who willingly immigrate to a country) are often optimistic about the connection between hard work and success. In contrast, "involuntary" minorities, those who come to a country unwillingly through slavery or annexation of land, are not hopeful about their chances to succeed in a country to which they did not choose to migrate. Asian Americans, as voluntary immigrants, may be confident about returns to their education in the United States and hence may invest more in education.

Furthermore, immigrants may be a self-selected group with high motivations to achieve, as evidenced by the fact that they chose to immigrate (Gibson and Ogbu 1991).[3] One of the many ways that Asian American ethnic groups differ is by the proportion of recent immigrants. Southeast Asians, for example, generally came to the United States in past 20 years, whereas many Japanese families have been in this country for several generations. To account for the effects of recent immigration, we included children's immigration generation as an explanatory factor in our analyses.

DATA AND METHODS

For the NELS, a sample of 24,599 U.S. eighth graders were surveyed in 1988 and reinterviewed in 1990, 1992, and 1994. Information was collected from the sampled students and their parents, teachers, and school principals. Although many other studies, including Monitoring the Future and High School and Beyond, have recorded the educational expectations of high school students, they have included fewer than 1,000 Asian Americans. NELS was particularly appropriate for our research because it contains an oversample of Asian American students: over 1,000 in the base-year survey. This oversampling, along with detailed information on Asian ethnicity, enabled us to make cross-ethnic comparisons within the Asian American subpopulation. Our analysis was restricted to Asian American and white students.

Like many other longitudinal studies, NELS suffers from attrition in follow-up surveys. To preserve cases, we included all students with valid responses to the educational-expectation question in the first follow-up survey who also responded to the base-year survey. Because whites are more likely than Asian Americans to drop out of high school and dropouts are likely to have low expectations, our treatment of attrition may have introduced a conservative (negative) bias toward the estimated gap in educational expectations between Asian Americans and whites in the 1990 follow-up.[4] The size of the sample for our analyses of educational expectations in 1990 was 13,112. We selected a battery of variables (see Table 1) that represented the three hypothesized explanatory factors and included them as independent variables in both the linear and logistic regression analyses.

Variables

Children's Expectations The survey asked the children, "As things stand now, how far in

school do you think you will get?" For our linear models, children's educational expectations were recoded as years of schooling, as follows: less than high school = 11, high school graduation = 12, two-year college or some college = 14, four-year college = 16, professional or master's degree = 18, and doctorate = 20. For the logistic regression models, expectations were dichotomized to compare those who expected to finish college with those who did not. In both cases, expectations were measured in 1990, when most of the NELS respondents were in the 10th grade.

Race-Ethnicity The 980 Asian American respondents included 204 Chinese, 194 Filipinos, 57 Japanese, 137 Koreans, 163 Southeast Asians (Cambodians, Laotians, Hmong, and Vietnamese), 87 South Asians (Asians Indians and Pakistanis), and 138 "other" Asians (those who chose the "other" category or who identified themselves as Asian by race but did not choose an ethnic category).

Immigration Generation We constructed a variable measuring the immigrant generation of each child. First generation means that both the child and at least one of the child's parents were born outside the United States. Second generation means that the child was born in the United States, but at least one parent was not. Third generation means that the child and both parents were born in the United States. Since information on the respondents' and parents' birthplaces was available only from the parents' questionnaire, children whose parents or guardians did not respond to this question were categorized as having missing values on this variable.

Socioeconomic and Other Background Factors To gauge SES, we considered three categories of mothers' and fathers' levels of education: less than high school, high school, and college. We also used a composite index measuring SES. The index, constructed by NCES, was based on the prestige of both the mothers' and fathers' occupations (scored with the Duncan Socioeconomic Index scale), family income, and both parents' levels of education, with each component equally weighted. This index is standardized to have a mean of 0 and a standard deviation of 1 for the entire sample (NCES 1990).

In addition to these measures of family SES, we accounted for family composition and structure. McLanahan and Sandefur (1994) found that children from single-parent and stepparent families are more likely to drop out of school than are children from traditional, two-parent families. Given that Asian American children are more likely to belong to intact families than are white children (Kitano and Daniels 1988; Min 1988), we hypothesized that the effects of family structure should favor Asian American children and included a variable that measured whether the child resided in an intact or nonintact family. The number of siblings may also affect children's expectations because the presence of numerous siblings may dilute family resources and decrease parental attention devoted to each child (Blake 1989; Steelman and Powell 1990). We measured number of siblings continuously.

Furthermore, we included two characteristics of children's schools as background characteristics: the type of school a child attended and the urbanicity of a school. Type of school, a dummy variable, differentiated children who attended public schools versus private schools. For school urbanicity, rural schools were contrasted with urban or suburban schools.

Academic Ability There has been much debate about measures of differences in ability among individual students, since scores on proficiency and other tests may be confounded by cultural biases. Furthermore, tests may not accurately gauge future success in high school and college (Sacks 1997). Ideally, we would like to have had access to a variety of measures of ability. Unfortunately, NELS provides only a few measures of ability, such as grades, whether students were held back a grade, and scores on proficiency tests administered to all sampled students. We used two of these measures in our analyses: whether students were retained a grade and scores on proficiency tests.[5] Test scores were standard-

ized on a scale of 0 to 100 (with a mean of 50 and a standard deviation of 10 for the entire NELS sample) in three subjects: reading, mathematics, and science. In an attempt to sort out the reciprocal causality between tested ability and expectations, we used tested ability during the 8th grade.

Parent's or Guardian's Expectation A parent's or guardian's self-reported educational expectation for his or her child was measured continuously in years of education in the linear models and dichotomously (completion of college education or not) in the logistic regression models. Values were assigned to categorical responses in the same manner as they were assigned to children's educational expectations. To separate potential reciprocal causality (Hout and Morgan 1975), we measured the parent's expectation for the child during the 8th grade (see the Appendix for information on which parents or guardians answered the questionnaire). For the children whose parents or guardians did not complete the questionnaires, parental expectation was coded as missing.[6]

RESULTS

Descriptive Statistics

Table 1 presents descriptive statistics for the variables used in the study by ethnicity. Case weights for the 1988-90 panel were used to account for stratified sampling and nonresponses. The first row of the table indicates the mean expected years of schooling. Clearly, all the Asian American groups had higher average educational expectations than did the whites: 16.1 years for Filipinos, 16.1 years for Southeast Asians, 16.7 years for Japanese, 16.9 years for Chinese, 17.5 years for Koreans, and 18.3 years for South Asians, in contrast to 15.6 years for whites. The third row shows that a greater proportion of Asian Americans than whites expected to graduate from college, ranging from 67.9 percent (for Southeast Asians) to 95.7 percent (for South Asians), compared to 58.3 percent for whites. Although it is evident that the educational expectations of the Asian American students were higher than those of the white students, few such clear patterns can be generalized from the distributions of the explanatory characteristics.[7] Ethnic differences among Asian Americans in these characteristics were generally large.

The level of parents' education varied greatly by ethnicity. Note that the comparison of parental education across ethnic groups is not straightforward because of the presence of a category for missing values. Furthermore, the percentage of missing values also varied enormously by ethnicity. For mother's education, for instance, it was as high as 40.1 for Southeast Asians and as low as 9.9 for whites; a similar pattern was observed for father's education. Although we do not know the precise reasons for the missing values, it appears that percentage missing is related to the proportion of recent immigrants of different ethnic groups: the proportion is the lowest for Japanese Americans and the highest for Southeast Asian Americans. Under the assumption of missing at random, we recalculated the distributions for parents' education by ethnicity based on nonmissing observations. We found that the parents of the South Asian, Japanese, and Korean students had substantially higher levels of education than did the parents of the white students. For example, all the South Asian fathers completed high school, whereas 13.7 percent of the white fathers did not.

Similarly, the SES index also revealed substantial ethnic differences in family socioeconomic background among Asian Americans, with South Asians, Japanese, and Koreans scoring the highest (0.81, 0.42, and 0.39, respectively) and Southeast Asians (-0.38) falling behind the whites (0.08). Chinese and Filipinos also scored higher than the whites (0.17 and 0.22, respectively), although their relative advantages were much smaller than those of the South Asians, Japanese, and Koreans.

The rank order of ethnicities on measured SES—South Asian, Japanese, Korean, Filipino, Chinese, whites, and Southeast Asians—does not hold for standardized tests. For instance, on the standardized mathematics test, Koreans and Chinese scored the highest (58.3), followed by South Asians (56.9),

Table 1. Descriptive Statistics on Students' Demographic and Socioeconomic Characteristics, Ability, and Parents' Expectations, by Ethnicity

	White	Chinese	Filipino	Japanese	Korean	Southeast Asian	South Asian	Other Asian
*Child's Expectation**	15.6	16.9	16.1	16.7	17.5	16.1	18.3	15.4
(SD)	(2.4)	(2.4)	(2.4)	(2.4)	(2.3)	(2.6)	(2.0)	(2.6)
Graduate from college	58.3	74.6	69.5	84.8	84.8	67.9	95.7	53.0
Child's Generation								
First	0.7	49.2	39.7	17.4	38.2	68.3	44.8	29.0
Second	4.1	34.5	34.1	29.5	39.1	15.1	43.1	14.6
Third	89.3	8.7	8.6	48.8	1.1	0.4	5.7	45.6
Missing	5.8	7.6	17.5	4.3	21.6	16.3	6.3	10.8
Father's Education								
Less than high school	12.0	10.9	8.4	6.2	3.1	7.8	0.0	6.3
High school graduate	47.5	34.6	47.3	34.5	34.7	24.8	12.2	34.2
College graduate	28.0	38.4	29.9	57.0	45.5	26.9	64.0	32.5
Missing	12.5	16.2	14.3	2.2	16.7	40.5	23.8	26.9
Mother's Education								
Less than high school	11.0	28.9	10.8	8.2	6.6	25.0	1.1	13.7
High school graduate	57.0	21.0	42.7	40.8	33.8	24.0	16.2	34.1
College graduate	22.2	30.8	28.7	39.5	36.0	10.9	51.1	26.4
Missing	9.9	19.4	17.8	11.4	23.6	40.1	31.7	25.9
*SES Index**	0.08	0.17	0.22	0.42	0.39	-0.38	0.81	0.18
(SD)	(0.74)	(0.88)	(0.69)	(0.62)	(0.67)	(0.97)	(0.74)	(0.83)
Family Structure								
Intact	65.1	79.6	66.2	76.1	68.5	61.0	87.5	68.9
Nonintact	29.4	12.6	18.0	18.7	14.0	22.1	5.8	21.3
Missing	5.5	7.8	15.6	5.2	17.4	16.9	6.7	9.8
*Number of Siblings**	2.3	2.6	2.3	1.9	2.0	3.1	1.7	2.3
(SD)	(1.6)	(1.9)	(1.5)	(1.4)	(1.4)	(1.9)	(1.0)	(1.5)
Missing	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0
School Type								
Public	87.9	91.5	75.5	91.0	89.5	90.3	87.3	73.6
Private	10.4	8.3	22.4	9.0	8.7	9.7	12.7	26.1
Missing	1.8	0.3	2.1	0.0	1.9	0.0	0.0	0.3
School Urbanicity								
Urban or suburban	63.8	91.7	90.2	87.6	83.8	94.6	87.9	85.9
Rural	34.8	8.0	7.7	12.4	14.3	5.4	12.1	14.2
Missing	1.4	0.3	2.1	0.0	1.9	0.0	0.0	0.0
Ever Held Back								
No	80.5	89.7	84.2	75.6	81.1	76.4	86.1	69.2
Yes	14.6	4.8	8.1	7.4	8.0	13.6	3.1	22.0
Missing	4.9	5.5	7.7	17.0	11.0	10.0	10.8	8.7
*Standardized Reading Score**	52.0	52.0	51.0	52.2	54.2	50.7	58.5	50.0
(SD)	(9.9)	(11.0)	(9.6)	(10.2)	(9.9)	(9.5)	(9.0)	(11.2)
Missing	3.0	1.7	10.7	7.7	1.3	1.3	2.4	1.8
*Standardized Math Score**	52.1	58.3	51.8	53.2	58.3	53.8	56.9	53.0
(SD)	(9.9)	(10.4)	(10.4)	(10.7)	(10.0)	(10.2)	(10.2)	(10.1)
Missing	3.0	1.7	10.1	7.7	1.3	1.3	2.4	3.4
*Standardized Science Score**	52.1	54.2	51.0	52.0	55.1	51.7	55.3	50.0
(SD)	(9.9)	(11.1)	(10.5)	(8.7)	(10.2)	(9.5)	(9.9)	(11.0)
Missing	3.0	1.7	14.5	7.7	1.3	1.3	2.4	2.7
*Parent's Expectation**	15.4	17.3	16.0	16.7	17.1	17.0	18.1	16.2
(SD)	(2.2)	(2.2)	(2.3)	(2.4)	(2.4)	(2.5)	(2.7)	(2.4)
Missing	4.3	5.5	11.9	4.3	10.6	9.6	5.7	9.3
N	12,132	204	194	57	137	163	87	138

Note: Descriptive statistics are weighted, with unweighted sample sizes reported in the last row. An asterisk (*) denotes means, not percentages as in the rest of the table. Missing values are excluded for calculation of means.

Southeast Asians (53.8), Japanese (53.2), whites (52.1), and Filipinos (51.8). Note that the differences among Koreans, Chinese, and South Asians and among Southeast Asians, Filipinos, and whites are small. However, the gap between the first group and the second group is appreciable.

Finally, the parents of the Asian American students reported higher educational expectations for their children than did their white counterparts. The Asian American parents' expectations ranged from 16.0 to 18.1 years, compared to 15.4 years for the white parents. It should be emphasized that parental expectations also varied among the Asian American groups. The Chinese and South Asian parents expected their children to attain the most schooling (17.3 and 18.1 years), followed by the Southeast Asian and Korean parents (17.0 and 17.1 years) and the Japanese and Filipino parents (16.7 and 16.0 years).

A natural conclusion from examining the descriptive statistics is that Asian Americans are too heterogeneous across ethnic boundaries to be treated as a single group. For example, 48.8 percent of the Japanese American children but only 0.4 percent of the Southeast Asian children were third generation. The Southeast Asian Americans were also far less well off on standard measures of SES than were the other Asian American groups. Whereas the South Asian, Korean, and Japanese parents had the highest SES, the Chinese American students scored among the highest on the standardized mathematics test. Given the Southeast Asian students' poor family SES and average test scores, it is especially significant that their parents had high educational expectations for them—about 1 1/2 years above those of the white parents.

Linear Regression

The results from our linear regression analysis demonstrate how socioeconomic characteristics, measures of academic ability, and parental expectations explain the Asian-white gap in educational expectations. Table 2 shows estimated coefficients for five linear regression models using data from both the base year and the first follow-up survey of NELS (NCES 1990, 1992).[8] The dependent variable was years of schooling that the respondent expected to attain at the time of the first follow-up survey.

The first model in Table 2 includes only the bivariate effects of ethnicity on educational expectations. All the observed Asian-white gaps are statistically significant from 0 at the 1 percent α level. According to Model 2, to which immigration generation was added, the third-generation students had significantly lower expectations than did the first-generation students. Much of the effects of ethnicity on educational expectations are due to the fact that groups like the Filipinos and Southeast Asians were composed of many first-generation respondents. When generation was included in Model 2, coefficients for all ethnic groups decreased substantially, and those for Filipinos, Southeast Asians, and "other" Asians were no longer significant.[9]

In the third model, we included measures of socioeconomic status, family structure and composition, and school characteristics. The estimated coefficients of these variables had their expected effects. For example, family SES and parental education had strong, positive effects. Similarly, the coefficient of family structure was in the expected direction and was statistically significant at the 5 percent α level (coeff. = -0.118 for nonintact families). Number of siblings was also significantly negative (coeff.= -0.073). The children who attended public schools expected significantly less education than did those who attended private schools, but the location of the school (urban versus rural) made little difference.

Once these variables were included in Model 3, differences between the whites and most of the Asian American groups, particularly the Japanese, Koreans, and South Asians, decreased. However, the Chinese and Southeast Asians are prominent exceptions to this pattern. When background characteristics were controlled, the net difference in educational expectations between the Chinese and whites increased slightly. The estimated difference between the Southeast Asians, a group with particularly low SES, and the whites increased from 0.82 years in the bivariate model to 1.19 in Model 3.

In Model 4, we added variables that measured students' tested academic ability in the

Table 2. Estimated Coefficients of Linear Regression Models Predicting Educational Expectations: First Follow-up of NELS

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	15.780**	16.249**	16.075**	11.989**	8.034**
Ethnicity (white excluded)					
Chinese	1.407**	0.931**	1.059**	0.660**	0.393**
Filipino	0.617**	0.127	0.130	0.205	0.159
Japanese	1.203**	0.931**	0.436	0.491	0.235
Korean	1.753**	1.294**	0.962**	0.776**	0.647**
Southeast Asian	0.815**	0.368	1.191**	0.906**	0.572**
South Asian	2.703**	2.170**	1.024**	0.837**	0.649**
Other Asian	0.568**	0.330	0.190	0.243	0.036
Child's Generation (first excluded)					
Second		0.246	-0.231	-0.356**	-0.228*
Third		-0.507**	-0.565**	-0.588**	-0.346**
SES Index			1.003**	0.662**	0.423**
Father's Education (less than high school excluded)					
High school graduate			0.375**	0.224**	0.157*
College graduate			0.857**	0.545**	0.420**
Mother's Education (less than high school excluded)					
High school graduate			0.326**	0.172*	0.176**
College graduate			0.389**	0.203*	0.179*
Family Structure (intact excluded)					
Nonintact			-0.118*	-0.051	-0.052
Number of Siblings			-0.073**	-0.048**	-0.036**
School Type (private excluded)					
Public			-0.520**	-0.323**	-0.241**
School Urbanicity (urban or suburban excluded)					
Rural			0.026	-0.030	-0.007
Ever Held Back (no excluded)					
Yes				-0.609**	-0.475**
Standardized Reading Score[a]				0.031**	0.024**
Standardized Math Score[a]				0.041**	0.029**
Standardized Science Score[a]				0.010**	0.007**
Parent's Expectation[a]					0.313**
R^2	*0.021*	*0.025*	*0.264*	*0.352*	*0.404*

Note: * $p < .05$, ** $p < .01$. Sample size is 13,112. The models also include dummy variables denoting missing values for all independent variables except for ethnicity.

[a]These variables were measured during the 8th grade.

8th grade. As expected, scores on the reading, mathematics, and science proficiency tests all positively and significantly predicted a child's educational expectation and the experience of being held back a grade had a negative effect. With the inclusion of these variables, the observed differences between Asian Americans and whites generally narrowed for all the groups except the Filipinos, Japanese, and "other" Asians. Despite the decrease, the coefficients for the Chinese, Koreans, Southeast Asians, and South Asians remained statistically significant from 0. It is noteworthy that differences between the first-

and third-generation students increased with the addition of ability measures, suggesting that at all ability levels, first-generation students maintain higher educational expectations.

In Model 5, we included a variable that measured a parent's or guardian's expectation. The results indicated that the parents' expectations had strong and positive effects on the children's expectations. When the parents' expectations were controlled in Model 5, the estimated gaps between all the Asian American groups and the whites narrowed. Of particular interest was the dramatic decrease for the Chinese (from coeff. = 0.660 in Model 4 to coeff. = 0.393 in Model 5). In this final, comprehensive model, the educational expectations of the Chinese, Koreans, Southeast Asians, and South Asians remained significantly higher than those of the whites. The Koreans and South Asians, for example, still expected to achieve 0.65 more years of education than did the whites. With the inclusion of parents' expectations, the differences between third-generation and first-generation students' educational expectations also decreased, suggesting that high parental expectations underlie the high expectations of first-generation students.

Logistic Regression

The preceding linear regression results were easy to interpret, since the scale of the dependent variable is in expected years of education. In facilitating the interpretation, however, we forced the outcome variable to be interval level, so important transitions across succeeding stages of the educational ladder were ignored. To assess the robustness of our results, we experimented with several different specifications of educational expectations as the outcome variable, alternately as an interval, ordinal, or nominal variable. Through experimentation, we found that the most meaningful nonlinearity is in the expected transition to a four-year college education. Thus, in Table 3, we present the results of five logistic regression models that are comparable to the linear models in Table 2, the dependent variable being whether a student expected to finish college (yes = 1). For these models, the estimated logit coefficients can be easily converted to predicted probabilities using the following formula:

$$Pr\,(y = 1) = \exp(x'b)/[1 + \exp(x'b)]$$

where $Pr\,(y = 1)$ is the probability that the student expects to finish college, x is a vector of the explanatory variables, and b is the estimated logit coefficients of the explanatory variables.

In general, the results of the logistic regression models are consistent with those of the linear regression models. According to the bivariate model, Model 1, all the Asian American ethnic groups were more likely to expect to finish college than were the whites, except for "other" Asians. Differences between the Filipinos and the whites became insignificant once immigration generation and other socioeconomic characteristics were included in Models 2 and 3. Since the coefficients for the control variables were similar to those reported in the linear models, we do not reiterate our interpretations here.

Similar to the linear regression results, the addition of tested ability measures in the logistic Model 4 explained much of the differences between the Chinese and the whites and between the Koreans and the whites. It explained a small amount of the difference between the Southeast Asians and the whites but none of the difference between the Filipinos and Japanese and the whites. In contrast to the linear model, tested ability did not explain any of the difference between the South Asians and the whites. In the final model, Model 5, the gaps between the whites and all the Asian American groups, except the South Asians, narrowed, and the differences between the Japanese and the whites were no longer significant. The groups that maintained significantly higher expectations of finishing college after all the explanatory factors were controlled were the Chinese, Koreans, Southeast Asians, and South Asians.[10]

CONCLUSION

The primary goal of this study was to explore the reasons why distinct Asian American groups have higher educational expectations

Table 3. Estimated Coefficients of Logistic Regression Models Predicting Expectation to Graduate from College: First Follow-up of NELS

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.494**	0.800**	1.289**	-3.273**	-3.377**
Ethnicity (white excluded)					
Chinese	1.264**	0.928**	1.428**	1.003**	0.791**
Filipino	0.459**	0.102	0.138	0.195	0.119
Japanese	1.472**	1.290**	0.888*	0.999*	0.828
Korean	1.395**	1.075**	0.978**	0.793**	0.726*
Southeast Asian	0.532**	0.236	1.163**	0.926**	0.719**
South Asian	3.256**	2.873**	2.241**	2.376**	2.470**
Other Asian	0.333	0.175	0.133	0.207	0.117
Child's Generation (first excluded)					
Second		0.279	-0.080	-0.217	-0.118
Third		-0.332*	-0.409*	-0.478**	-0.536
SES Index			0.972**	0.723**	0.495**
Father's Education (less than high school excluded)					
High school graduate			0.261**	0.127	0.066
College graduate			0.918**	0.673**	0.536**
Mother's Education (less than high school excluded)					
High school graduate			0.216**	0.038	0.023
College graduate			0.374**	0.181	0.138
Family Structure (intact excluded)					
Nonintact			-0.200**	-0.143**	-0.142**
Number of Siblings			-0.082**	-0.068**	-0.059**
School Type (private excluded)					
Public			-0.850**	-0.698**	-0.639**
School Urbanicity (urban or suburban excluded)					
Rural			0.008	-0.083	-0.053
Ever Held Back (no excluded)					
Yes				-0.583**	-0.493**
Standardized Reading Score[a]				*0.030***	*0.025***
Standardized Math Score[a]				*0.055***	*0.046***
Standardized Science Score[a]				*0.010***	*0.009**
Parent's Expectation (will not graduate from college excluded)[a]					
Will graduate from college					1.274**
Model $\chi 2$	*191.71*	*239.50*	*3544.56*	*4957.51*	*5590.55*
df	*7*	*10*	*25*	*33*	*35*

Note: * $p < .05$, ** $p < .01$. Sample size is 13,112. The models also include dummy variables denoting missing values for all independent variables except for ethnicity.

[a] These variables were measured during the 8th grade.

than do whites. To do so, we focused on three sets of explanatory factors: socioeconomic and background characteristics, tested academic ability, and parental expectations. Using linear and logistic regression models, we found that the explanatory power of the three sets of factors does indeed vary across different Asian ethnic groups. Background factors, for example, explain much of the differences between the educational expectations of the Filipinos, Japanese, and South Asians and those of the whites, but none of

the differences in expectations between the Chinese and Southeast Asians and the whites. Ability explains some of the high expectations of the Chinese, Koreans, and Southeast Asians, but none of those of the Filipinos or Japanese. Parental expectations play an important role in explaining the Asian-white gap for all the ethnic groups except in one case: South Asian youths' expectations of finishing college.

Ostensibly through different paths and for different reasons, Asian American youths expect to achieve higher levels of education than do their white counterparts. It is indeed remarkable that so many Asian ethnic groups with diverse cultural heritages and immigration experiences actually converge in this important respect. Perhaps this commonality is due partially to the selectivity of unobserved characteristics and experiences that all immigrants share (Gibson and Ogbu 1991; Kao and Tienda 1995) or perhaps it is part of Asian Americans' conscious strategy to overcome racial discrimination and achieve upward mobility (Sue and Okazaki 1990; Xie and Goyette 1998). Whatever the causes, its implications are clear. In a society in which economic returns to schooling are rising (Mare 1995), education is an increasingly important channel to socioeconomic success. It is in this sense—social mobility through the educational channel—that Asian Americans of diverse groups are similar and can be treated as such.

NOTES

1. Two exceptions to this generalization are Kao (1995), who explicitly compared mathematical ability and grades across eight Asian American ethnic groups, and Hao and Bonstead-Bruns (1998), who investigated educational expectations and academic achievement separately for Chinese, Filipino, and Korean immigrants.

2. Unfortunately, there are no good instrumental variables in the data set that would have allowed us to tease out the possible reciprocal causality between test scores and educational expectations. Instead, we made use of the longitudinal nature of the NELS data by using children's proficiency test scores during the 8th grade to predict their educational expectations in the 10th grade.

3. However, research by Kao and Tienda (1995) and Hao and Bonstead-Bruns (1998) found that Hispanic immigrants' educational expectations are similar to or even lower than native-born Hispanics' expectations.

4. X. Chen (1996) suggested another source of bias in NELS that may have affected our research. NELS excluded children who had extreme difficulty speaking English. Children with little proficiency in English may be more discouraged about their ability to attain higher levels of education in the United States. Therefore, the educational expectations of some groups that are dominated by first-generation Asian Americans, like Southeast Asians and Koreans, may have been overestimated in our study.

APPENDIX

Parent or Guardian Respondent, by Children's Ethnicity

	White	Chinese	Filipino	Japanese	Korean	Southeast Asian	South Asian	Other Asian
Parent or Guardian								
Mother	76.49%	46.55%	58.57%	61.44%	50.75%	31.83%	58.65%	57.01%
Father	15.74	46.45	26.51	27.57	37.11	50.09	29.78	30.71
Stepparent	2.06	0.00	1.49	5.42	0.35	3.38	3.84	1.35
Other guardian	1.31	1.24	2.03	1.27	0.54	3.57	1.04	1.16
Missing	4.39	5.76	11.40	4.31	11.25	11.13	6.70	9.78
(N)	(12,132)	(204)	(194)	(57)	(137)	(163)	(87)	(138)

Note: Reported sample sizes are unweighted, while all percentages are weighted.

5. We chose not to include grades for two reasons. First, we believe that grades, more than scores on proficiency tests and grade advancement, are affected by students' educational expectations and thus are subject to reciprocal causality. Second, we could not control for variation in grading practices across schools.

6. Because NELS provided translators to aid Chinese, Korean, Filipino, and Vietnamese parents, it achieved a weighted response rate of approximately 90.8 percent among Asian American parents. However, this proportion is slightly lower than the response rate of 93.7 percent for the entire sample.

7. Exceptions are immigration generation and urban location of school. As expected, the Asian American respondents were more likely to be first- and second-generation immigrants and to attend urban schools.

8. On the advice of an anonymous reviewer, we report unweighted coefficients. In earlier analyses, we estimated the same models using sampling weights provided by NCES. The results were similar to those reported in Tables 2 and 3. The regressions we report also included dummy variables denoting missing values for independent variables. Other treatments of missing values (listwise deletion) yielded similar results. These and other unreported results are available from the authors on request.

9. We also tested interactions between ethnicity and generation. An *F*-test ($F = .868$ for 21, 13,055 *df*) indicated that the improvement in fit was not significant at the .05 level. Furthermore, none of the interaction coefficients achieved significance.

10. We tested but failed to find interaction effects between ethnicity and generation.

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