
BILINGUALISM AND THE ACADEMIC ACHIEVEMENT OF FIRST- AND SECOND-GENERATION ASIAN AMERICANS: ACCOMMODATION WITH OR WITHOUT ASSIMILATION?*

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Recent scholarship claims that bilingualism has a positive effect on the academic achievement of immigrant children. According to this perspective, growing up speaking two languages is beneficial because it stimulates cognitive development and allows immigrants a means of resisting unwanted assimilation. Immigrant children who are fluent bilinguals can use their native-language ability to maintain beneficial aspects of their ethnic culture while accommodating to the linguistic demands of an English-speaking society. Using data on first- and second-generation Asian American students from the 1988 National Educational Longitudinal Study, we test for these hypothesized effects of bilingualism. We find no evidence that bilingualism per se has a positive effect on achievement. Instead, speaking a native language with parents has a temporary positive effect if the parents are not proficient in English. These results indicate that the academic importance of bilingualism is transitional: The educational benefits of delaying linguistic assimilation exist only before immigrant parents achieve a moderate level of English-language proficiency.

The relationship between bilingualism and academic achievement draws much attention from both social scientists and policymakers because of the large presence of bilingual students in the American school system. Although immigrant groups overwhelmingly tend to become native English speakers within several generations (Veltman 1983), the continued influx of immigrants has kept the number of children who speak non-English languages at high levels. In the

past several decades, immigration flows have increased, and the percentage of the population that is foreign-born has nearly doubled—from 4.8 percent in 1970 to 8.7 percent in 1994 (U.S. Bureau of the Census 1995). As a result, the number of children speaking non-English languages increased to new high levels in the 1990s (National Center For Education Statistics 1993). In 1989, 6.3 million youths ages 5 to 17 spoke a language other than English at home. This is a 38-percent increase from 1980 and represents about 14 percent of the school-age population (Anstrom 1996).

What is the effect of bilingualism on academic achievement? There are two prevailing views, the “cognitive perspective” and the “cultural perspective,” and both contend that the effect is positive. The cognitive perspective suggests that bilingualism is beneficial to mental development because it allows bilingual children to switch easily between two linguistic mediums (Cummins 1977; Peal and Lambert 1962). The cultural perspective holds that bilingual children have better access to the ethnic and cultural capital of their parents than do their monolingual

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counterparts (Bankston and Zhou 1995). If there were something culturally specific about immigrants' values and practices that facilitate academic success and upward mobility, then bilingual children would have the advantage of benefiting from both their cultural heritage and from English-language fluency. The cognitive and cultural perspectives on bilingualism are similar in that both argue that fluent bilingualism is *unconditionally* beneficial for immigrant students.

We advance the alternative thesis that bilingualism is important in a transitional sense because it enables immigrant children to communicate effectively with parents who are not proficient in English. In contrast to the cognitive and cultural perspectives, we claim that bilingualism is beneficial for academic achievement only because it prevents a language gap from emerging between parents and children. In immigrant families, the emergence of a language gap is a real possibility. Most immigrant children quickly attain English-language fluency and develop a preference for speaking English over their native language. For example, a study of 2,660 first- and second-generation Latin American and Caribbean children in Florida found that 82 percent preferred to speak English and that 73 percent claimed to speak English "very well" (Portes and Schauffler 1994). The danger is that the rapid linguistic assimilation of immigrant children may cause them to lose the ability to communicate effectively with parents whose English-language assimilation is proceeding at a slower pace. If a language gap does emerge, parents encounter difficulties in monitoring their children's performance and instilling values and behaviors beneficial for academic achievement (Wong 1991). In this sense, delaying linguistic assimilation is important, as it ensures effective communication between parents and children. However, the *academic* benefits of maintaining bilingual proficiency are transitional and gradually diminish as the parents develop English-language proficiency.

To assess whether the effect of bilingualism on academic achievement is transitional rather than cognitive or cultural, we use data on first- and second-generation Asian students from the 1988 National Educational Longitudinal Study (NELS). It has been reported that first- and second-generation

Asian Americans have significantly higher levels of academic achievement than other Asian-Americans (Kao and Tienda 1995). Hence, it is reasonable to infer that positive effects of delayed linguistic assimilation would be evident in this population.

THREE THEORETICAL PERSPECTIVES

The "effect" of bilingualism on achievement and social mobility can only be interpreted within a particular social context. This context may be supportive or hostile to the maintenance of bilingualism. Despite the tremendous linguistic diversity brought to America through immigration, one of the striking characteristics of American society is its linguistic homogeneity and the degree to which immigrant languages are quickly replaced by English (Fishman 1966; Veltman 1983). Given this historical record, America cannot be said to have provided a supportive environment for the maintenance of minority languages (Soto 1997). Indeed, it seems as if each successive wave of immigrants has provoked nativist sentiments and accompanying complaints asserting that their linguistic assimilation was not proceeding rapidly enough and that they might prove to be "insoluble" in the American melting pot (Ridge 1981). Widespread antipathy toward the use of non-English languages by immigrants helped maintain the traditional "sink or swim" approach toward the education of immigrants' children, which consisted of immersion in English-language classrooms and resulted in high dropout rates (Baron 1991; Berrol 1995; Stein 1986).

Early scientific research in linguistics and sociology concerning the effect of bilingualism on intelligence was stimulated by the development of standardized tests in the 1920s and an interest in the methodological problems of measuring the intelligence of native speakers of foreign languages (Darcy 1953; MacNab 1979). Many of these studies concluded that children who grew up learning two languages would not progress as rapidly as their English-speaking peers because of the intellectual burden and "mental confusion" of learning an additional language (Saer 1922, 1923; Smith 1923). Saer (1923), for instance, studied 1,400 children from ru-

ral Wales and found a 10-point advantage in IQ for students who spoke only English over students who were bilingual in Welsh and English. Another researcher concluded:

If it were possible for a child to live in two languages at once equally well, so much the worse. His intellectual and spiritual growth would not thereby be doubled, but halved. Unity of mind and character would have great difficulty in asserting itself in such circumstances. (Laurie 1890:15)

Other studies, however, noted that giving the IQ test in the respondents' native language improved the scores of bilinguals (Brown 1922).

The validity of these early studies is questionable because of inadequate control for the social class of bilingual students. In countries like the United States, the majority of the bilingual population is composed of recent immigrants with a lower socioeconomic status (SES) than that of the general population. Thus, estimated effects of bilingualism on academic performance are biased downward if this negative association between bilingualism and SES is not properly controlled. Hence, the negative effect of bilingualism found in these studies largely reflects the unmeasured lower SES of disadvantaged minority groups (Baker 1993). Some researchers, who have included adequate controls for SES and other relevant background variables, have found positive effects of bilingualism on academic performance. However, it remains unclear *why* bilingualism would benefit immigrant children.

The Cognitive Perspective

The widely held view that bilingualism has a negative or, at best, a neutral effect on intelligence and academic achievement was challenged in the 1960s by studies that controlled for social class and used a rigorous definition of bilingualism. Using matched samples of sixth-grade middle-class children in Montreal, Peal and Lambert (1962) found that bilingual children performed better in 15 of 18 measures of cognitive development. In particular, they found that the French-English bilinguals in their study demonstrated significant advantages over monolinguals in flexibility of thought and spatial analysis, and they interpreted the result as strong evi-

dence supporting their hypothesis that bilingualism has positive effects on intellectual development.

Later, an important innovation of this line of research emerged—the specification of different types of bilingualism that depend on the context in which language proficiency was acquired. Lambert (1977) and Cummins (1977, 1979) distinguish between “additive” and “subtractive” bilingualism. Additive, or fluent, bilingualism refers to learning the second language within a social context that allows the individual to maintain the first language. Subtractive bilingualism occurs when pressure is exerted to replace the first language with a second one. Positive self-concept is associated with the former; loss of culture and assimilation is associated with the latter (Baker 1993). According to the cognitive perspective, fluent bilingual speakers have an advantage because they have two codes for every concept, which leads to greater cognitive flexibility and better abstract reasoning powers. Following the initial publication of Peal and Lambert's study, many authors have supported their findings of positive cognitive effects for bilinguals (Bain 1974; Ben-Zeev 1977; Bialystok 1988; Duncan and De Avilla 1979; Lindholm and Aclan 1991; Willig 1985). We label the research by Peal and Lambert, Cummins, and subsequent authors in social linguistics the “cognitive perspective” because it proposes that bilingualism affects academic achievement, net of socioeconomic factors, through its positive influence on childhood cognitive development.

Although many studies have corroborated these findings of positive effects of bilingualism on cognitive development, there is good reason to be cautious about these conclusions. MacNab (1979) and Reynolds (1991) note that there is a selection problem inherent in distinguishing fluent bilinguals from other language groups because the brighter or more motivated students are more likely to learn English quickly and to be able to retain their native-language while they do so. In other words, for immigrant children, rapid acquisition of English and retention of native-language ability are affected by unobserved factors such as intelligence and motivation, which also have positive effects on academic achievement. Thus, part of the ap-

parent association between fluent bilingualism and school performance may result from these unobserved factors as common causes. If bilingualism is so narrowly defined that it includes only those students with the highest levels of fluency in both languages, it is likely that this selection problem will become even more significant. For our purposes, however, it is important to note that if unobserved factors such as intelligence and motivation are positively related to both achievement and the probability of being a fluent bilingual, as suggested by MacNab and Reynolds, then the multivariate estimate of the effect of bilingualism on achievement will be upwardly biased. Because of this, our statistical analysis provides a more stringent test of the hypothesis that there is *no* apparent cognitive benefit of bilingualism.

The Cultural Perspective

While the cognitive perspective has been concerned exclusively with the effect of bilingualism on mental development, the cultural perspective extends the attention to bilingualism as a communicative mechanism through which ethnic values and beliefs are imparted to immigrant children. The cultural perspective on bilingualism is a subset of recent scholarship that has attributed the educational success of some ethnic groups to their resistance to complete acculturation and the preservation of those aspects of their own cultures that promote academic success. Proponents of "segmented assimilation" (Portes and Zhou 1993) or "accommodation without assimilation" (Gibson 1989) argue that these groups prosper by deliberately preserving their cultural values and promoting ethnic solidarity. According to these scholars, immigrants use ethnicity as a distinct form of social capital (Zhou and Bankston 1994). Gibson (1987), for example, claims that the educational success of Punjabi immigrants in California is linked to their ability to adapt to the formal demands of the classroom while resisting the forces of unwanted cultural assimilation.

The cultural perspective begins with the premise that maintaining ethnic identity increases the social integration of the immigrant group, resulting in a tightly knit ethnic community that reinforces values and stan-

dards of behavior that promote academic success. It is argued that ethnic-group solidarity promotes immigrant minorities who lack the financial or human capital to achieve upward mobility (Portes and Zhou 1993). Concepts such as "social capital" and "ethnic capital" have been employed to explain this relationship between social mobility and the sociocultural practices of immigrant groups (Borjas 1992, 1994; Coleman 1988; Portes and Zhou 1993; Zhou and Bankston 1994). The basic idea is that certain cultural values and practices, which are carried on mostly within immigrant families but further reinforced by the larger ethnic community, constitute a form of "capital" that may be mobilized for the educational success of immigrant children. Although some recent immigrants possess relatively modest incomes and low levels of human capital, a supportive relationship between parents, children, and communities may provide a positive environment for success. The level of ethnic social capital has been measured as adherence to traditional values, commitment to ethnic endogamy, use of ethnically segregated social networks, and maintenance of the native language (Caplan, Choy, and Whitmore 1992; Portes and Schauffler 1994; Rumbaut 1994; Zhou and Bankston 1994).

Past research has established the importance of family resources for children's educational outcomes. While it is unnecessary to resort to the catch-all term "social capital" to appreciate the role of the family, we find it convenient to convey our ideas using Coleman's (1988) definition of social capital. Coleman claims that social capital within the family consists of the presence of adults and the level of attention they provide to their children. This attention can manifest itself in a variety of ways—instilling values and aspirations that contribute to success, encouraging the child's development by being involved in the school and monitoring homework, parental involvement and control over the child's activities, and so on. The quality and quantity of this attention determine the degree to which children are able to access the human capital of their parents. For instance, Coleman suggests that an increase in the number of siblings in a family leads to the "dilution" of the time and attention that parents can spend on each child and

hence decreases the effective social capital within the family. In the context of our study of the children of immigrants, if parents are unable to communicate effectively with their children the quality of parental supervision will be diminished, resulting in a decrease in social capital. Because fluent bilingualism among children reduces the possibility of a language gap between them and their immigrant parents, it prevents the erosion of family social capital.

The cultural perspective claims that the importance of bilingualism among immigrants extends beyond a strict definition of communication to encompass social values and practices intimately tied to language use. According to this view, bilingualism is an important way in which immigrant groups maintain ethnic social capital (i.e., culturally specific values and behaviors that reinforce academic achievement). More precisely, bilingualism allows immigrants to resist *linguistic* assimilation by maintaining their native language in addition to developing a fluent command of English. For example, because language use is closely connected to the formation of ethnicity (Phinney 1990, 1991), children's speech patterns signal their ethnic self-identity and may create tension in immigrant households if the parents and children have different language preferences. Because the majority of immigrant parents want their children to retain proficiency in their native language in addition to learning English (García and Otheguy 1988; Kim 1988), research on the psychosocial adaptation of immigrant children argues that the preference of children for speaking English is an important predictor of parent-child conflict (Rumbaut 1994; Wong 1991). In some languages, such as Vietnamese, native-language use may mark deference to parental authority through the use of pronouns that denote status; when children switch to English it is upsetting to immigrant parents and causes a loss in parental authority and esteem (Rumbaut and Ima 1988). Further, it has been argued that the preference among some immigrant children for speaking only English "may entail abandoning not only a mother tongue but also a personal identity" (Rumbaut 1994:780). Ethnic-language literacy and ethnic self-identification, others have claimed, "are so closely linked that they

should be seen as two interlinked aspects of ethnic-group membership" (Bankston and Zhou 1994:15). If a child's preference for speaking English emerges as a point of conflict, it may contribute to a breakdown in the parent-child relationship and a loss of social capital.

In a study of the ethnic identity of immigrant children in southern California and south Florida, Rumbaut (1994) found that children who preferred to speak English were significantly more likely to identify themselves as "unhyphenated" Americans. His results also show that ethnic identity is linked to patterns of language use within the household. For instance, among children who identified themselves as "Americans," 55 percent spoke English with their parents, compared with only 28 percent among those who identified with their parents' national origins. Because of this close connection between language and ethnic identity, bilingualism reflects not only delayed linguistic assimilation but also is an indicator of the maintenance of ethnicity. In this sense, bilingualism provides an important means through which immigrants can "accommodate without assimilating," by adapting to the functional demands of American society without giving up their linguistic and ethnic identity. If it can be demonstrated that bilingual children perform better academically than monolingual children, it will support the hypothesis that immigrant children benefit from delayed acculturation.

In their study of Vietnamese immigrants, Zhou and Bankston (1994) claimed that academic achievement is enhanced by factors relating directly to the preservation of ethnic cultures—such as language spoken at home, Vietnamese literacy, ethnic self-identification, ethnicity of friends, and commitment to ethnic endogamy. Bankston and Zhou (1995) argued that higher levels of Vietnamese-language literacy among immigrant Vietnamese children lead to higher levels of academic achievement because of increased access to culturally specific social capital: "In the Vietnamese community, values and traditions constitute a source of motivation and direction. . . . These cultural values and traditions are transmitted through the family with the help of the Vietnamese language" (p. 14). Their statistical analysis shows that Vietnamese literacy is positively correlated

with grade-point average and time spent on homework, suggesting that delaying linguistic assimilation would increase academic performance. However, their multivariate analysis on the effect of Vietnamese literacy on grades is weakened by the fact that the analysis does not control for factors such as time since immigration and parents' education and income.

Bankston and Zhou (1995) noted the difficulty of separating the cultural effect of language use from the cognitive/developmental effect. While these two effects should be viewed as complementary, we propose that one way of disentangling them is to look at the effect of native-language use with parents in addition to language proficiency. Native-language use with parents indicates the degree to which culturally specific social practices are currently being transmitted to children, while language proficiency by itself may represent a latent ability and the cognitive benefits associated with childhood development of dual-language proficiency.¹ Children growing up bilingual may have benefited from the cognitive effects of bilingualism, but their communication with parents may or may not shift to English when they enter school and develop a preference for speaking English. Native-language ability becomes latent if primary communication shifts to English. Assuming that the immigrant parents' values and behaviors contributing to their children's academic success are best expressed in the parents' native language, active native-language use between parents and children should correspond to a higher level of social capital. Conversely, not using the native language means a loss of social capital. Therefore, according to the cultural perspective, the frequency with which

the parents' native language is currently used within the household should have a positive effect on achievement, net of any cognitive benefits associated with developing bilingualism. The cultural perspective stresses the importance of *active use* of the native language between children and their parents to the maintenance of ethnic identity and ethnic social capital.

Studying the effects of bilingualism among immigrant minorities sheds new light on a central ambiguity at the heart of the cultural perspective. Is the academic success of upwardly mobile immigrants a result of the preservation of a distinct ethnic identity, or does it result from a more general set of practices such as hard work, high aspirations, and parental involvement that are easily transferred across different ethnic cultures? Although scholars advocating the importance of cultural factors have not always articulated the exact extent to which the social capital of upwardly mobile immigrants is derived from ethnic cultures, the implication is that social capital is culturally specific. For instance, a study of the academic performance of Southeast Asian immigrants concluded that "rather than adopting American ways and assimilating into the melting pot, the most successful Indochinese families appear to retain their own traditions and values" (Caplan et al. 1992: 42). Bankston and Zhou (1995) concluded that the Vietnamese youths in their study "seem to make a conscious attempt to avoid becoming assimilated into the nearby inner-city ghettos by maintaining their ethnic distinctiveness" (p. 15). In this sense, academic success is seen as a direct outcome of the ability of immigrant minorities to maintain their ethnic identity and delay acculturation. However, it seems paradoxical that the measures of ethnic social capital such as ethnically specific values, endogamy, and ethnic segregation lead to a faster rate of upward mobility into the American middle class, which has been characterized metaphorically as a "melting pot," at least for earlier European immigrants. That is, if preservation of ethnic identity is essential to social mobility, it is puzzling that interracial marriage rates are high among Asian Americans, a group that has achieved high social mobility, and that biracial children from such intermarriages are more

¹ Speaking ability in the parents' native language may be a function of the accumulated time speaking the language during childhood. We show below (in Tables 5 and 6), however, that there is considerable variation in language experience before starting school and in current patterns of native-language use with parents among students with the same language status in eighth grade. By distinguishing *ability* from *use*, we stress the importance of students' current native-language use with their parents. Nevertheless, native-language ability and native-language use are clearly interrelated.

likely to be identified as non-Asian than Asian (Xie and Goyette 1997).

If the social capital of immigrant groups is culturally specific, some cultures may be "better" than others at promoting academic success. For instance, advocates of the cultural perspective claim that "whether immigrant cultures are disadvantages or advantages can be considered in terms of whether these original cultures frustrate or enable upward mobility on the part of the second generation" (Zhou and Bankston 1994:825). Indeed, an analogy can be drawn between the cultural perspective and the "culture of poverty" perspective, as both place a premium importance on culture, with the latter attributing the poverty of inner-city African Americans to a "disadvantageous" culture. If, however, the practices and behaviors contributing to the academic success of immigrant groups are not culturally specific, the preservation of ethnicity per se is not an important prerequisite for educational success.

The Transitional Perspective

We offer a "transitional perspective" on bilingualism. We argue that the benefits of bilingualism are *neither* ethnically nor culturally specific, but instead are a result of the functional ability of children to communicate with their parents. In contrast to the two perspectives described above, we propose that bilingualism is important for immigrant children's academic achievement only because it prevents a language gap from emerging between them and their parents, not because native-language use promotes ethnic identity, facilitates access to cultural capital, or enhances cognitive development. In other words, nothing in the parents' behavior and values significantly affecting academic achievement is viewed as intrinsic to their native language. Our hypothesis is based on the well-known fact that school-age immigrant children typically learn English much more quickly than do their parents. This difference between children and parents in the rate of linguistic assimilation can create a language gap if the children develop a preference for speaking English while their parents still feel more comfortable speaking their native language (Wong 1991). According to our hypothesis, the importance of bi-

lingualism and native-language use for academic achievement is "transitional" because it disappears as soon as parent-child communication can proceed efficiently in English.

As in the cultural perspective, our transitional perspective also places a premium on native-language use as a form of social capital, rather than on native-language proficiency per se. However, there are two important ways in which the transitional perspective departs from the cultural perspective. First, we argue that the benefits of language use transcend cultural boundaries because what matters is effective communication between immigrant parents and their children. Second, the transitional hypothesis suggests that the beneficial effects of bilingualism are temporary and conditional on parents' language skills. If both parents and children are bilingual, language use within the household becomes a matter of personal choice without significant effects on the child's academic performance. When parents have limited English, it is important that children communicate to their parents in their native language, in addition to developing English proficiency.

This perspective resembles Gordon's (1964) theory of immigrant assimilation, which stresses the transitional importance of ethnic identification in the acculturation process:

The tendency will be for native-born children to become alienated from their immigrant parents and the culture they represent, as they respond affirmatively to the higher status American cultural values. The challenge . . . is, without mounting a doomed effort to stem the inevitable tide of American acculturation, to aid the second-generation child to gain a realistic degree of positive regard for the cultural values of his ethnic background, which will hardly retard the acculturation process, but will give the child a healthier psychological base for his confrontation with American culture and for his sense of identification with and response to his parents. (P. 245)

The danger of rapid assimilation is that it can alienate children from their immigrant parents and can lead them to reject their native culture. In this process of gradual assimilation, bilingualism smoothes the transition from an ethnic culture to the American mainstream.

Table 1. Hypothesized Effects of Language Variables on Academic Achievement

Language Variable	Theoretical Perspective		
	Cognitive	Cultural	Transitional
A. Fluent bilingual	+	+	0
B. Native-language use with parents		+	
C. Native-language use with parents when:			
Parents are not proficient in English			+
Parents are proficient in English			0

HYPOTHESES

Table 1 presents a few concrete and testable hypotheses concerning the effects of language variables on academic achievement. We discuss these hypotheses in conjunction with the three theoretical perspectives.

Cognitive Perspective

The central tenet of the cognitive perspective is that fluent bilinguals do better academically than students who are fluent only in English (“English-dominant” students) because the bilinguals have achieved fluency in English without losing their native-language fluency. The fluent bilinguals thus have the advantage of increased mental flexibility by being able to express themselves in two languages. In contrast, English-dominant students can manipulate abstract ideas in only one language—English. If the cognitive model is correct, we should observe a positive effect on academic achievement for fluent bilinguals as compared with English-dominant students. This hypothesis is indicated by a plus sign for row A in Table 1.

Cultural Perspective

The cultural perspective argues that in addition to the hypothesized cognitive effect, bilingualism has a positive effect on academic achievement because it increases ethnic identity and access to the social capital of parents and ethnic communities (Bankston and Zhou 1995). This model predicts positive effects on achievement for bilingual proficiency and for native-language use with parents. While language proficiency may represent the cognitive effect of bilingualism, the actual patterns of current language

use indicate the success that parents have in delaying acculturation and communicating culturally specific values to their children. If resisting unwanted cultural assimilation is important for upward social mobility, as is claimed by the cultural perspective, then increased native-language use between parents and children should have a positive effect on academic achievement. Moreover, because native-language use involves access to culturally specific forms of social capital and greater ethnic identification, the benefits of language use should be evident regardless of the parents’ English-language abilities. This hypothesis is indicated by the plus signs for both rows A and B in Table 1.

Transitional Perspective

According to the transitional perspective, there is no measurable positive cognitive or cultural effect of bilingualism on achievement once parents attain English proficiency. It is important to note that the transitional perspective predicts the same positive effect for native-language use as the cultural perspective when parents are not proficient in English. However, predictions from the two perspectives are radically different when parents are proficient in English. Stressing the functional importance of native-language use for maintaining the parent-child relationship, the transitional perspective proposes that native-language use with parents will have a positive effect on achievement *only* if the parents are not proficient in English. To capture the idea of the conditional nature of the transition effect, row C is broken down into two lines by parents’ English-language proficiency. It is predicted that bilingualism has no overall influence on academic performance except when parents are not proficient

Table 2. Description of Variables Used in the Analysis: Eighth-Grade Students Who are First- or Second-Generation Asian Immigrants, NELS, 1988

Variable	Description	Mean	S.D.
Math	Standardized eighth-grade math score	56.84	11.21
Grades	Composite grade-point average	3.39	.66
Eighth-grade language status	Reported eighth-grade language ability:		
	English dominant	.39	
	Fluent bilingual	.37	
	Native-language dominant	.17	
	Subtractive bilingual	.09	
Native-language use with parents	Student reports that parents ["always"/"most of the time"] speak native language to them	.48	
Male	Sex of student is male	.50	
Immigrant	Student immigrated to the United States (i.e., first-generation immigrant)	.61	
Years since immigration	Years since student immigrated (coded 0 if born in the United States)	7.93 ^a	3.40 ^a
Parents' English proficiency	Coded 1 ("fluent") if parent speaks English "very well" or "pretty well"		.62
Parents' education	Parents' years of education	15.38	2.90
Family income (ln)	Natural log of family income	10.37	1.10
Family income missing	Family income is missing	.03	
Ethnicity	Student's self-reported ethnicity		
School socioeconomic status	Mean socioeconomic status of other NELS students sampled from respondent's school	.10	.63

Note: For dummy variables, only the sample mean is given.

^a Mean and standard deviation shown for first-generation immigrants only.

in English; in this case native-language use with parents has a positive effect.

DATA

We analyze data from the first wave of the National Educational Longitudinal Study (NELS), a panel study that began in 1988 with over 24,000 eighth grade-students. One feature of NELS is that it is a large, nationally representative data set that includes standardized measures of academic achievement. Most previous studies of bilingualism were not based on nationally representative samples (see Reynolds 1991). Our sample contains all first- and second-generation Asian American students with Asian par-

ents.² The advantage of studying first- and second-generation Asian students is that because of the linguistic diversity of the Asian immigrant population, language use corresponds more closely to ethnicity than to race. Unless we wish to reduce the diverse cultural inheritance of Asians to a single "Asian" culture, the academic benefits of delaying linguistic assimilation will be evident in the use of mutually unintelligible ethnic languages such as Tagalog, Malay, Mandarin, and Vietnamese. In contrast, if Asian immigrants assimilate into the pan-ethnic racial category of "Asian American," the use of English as the

ent with the student's race. Of 892 first- and second-generation Asian students with test scores, 60 had a non-Asian parent. Excluding this group resulted in a sample size of 832 students. For a recent study of racial identification of biracial children with an Asian parent, see Xie and Goyette (1997).

² Because the NELS data identifies only the race of the parent who filled out the parent questionnaire we can only match the race of that par-

Table 3. Coding of Eighth-Grade Language Status: First- and Second-Generation Asian American Students, NELS, 1988

How Well Respondent Speaks English	How Well Respondent Speaks Native Language					Total
	"Very well"	"Pretty well"	"Well"	"Not very well"	"Not at all"	
"Very well"	170	136	115	142	66	629
"Pretty well"	43	57	25	26	2	153
"Well"	11	12	12	2	0	37
"Not very well"	5	4	2	1	1	13
Total	229	209	154	171	69	832

☐ Fluent Bilingual
 ☒ English Dominant
 ☐ Native Language Dominant
 ☒ Subtractive Bilingual

Note: Number of cases are shown in each cell of the table.

language of inter-ethnic communication is necessary. The situation is clearly different for Hispanics because they share a common language—Spanish. Indeed, the assimilation of different Latin American immigrants into the shared category of “Hispanic” may actually help maintain Spanish as a marker of group identity, and Spanish-language use thus would not necessarily reflect a deliberate strategy of delayed assimilation. Therefore, Asian immigrants are an ideal group for separating the cultural and cognitive effects of language use on academic achievement.

We excluded interracial families from our sample because intermarriage is evidence of substantial social assimilation that is likely to profoundly alter the effects of language use and proficiency among students. A benefit of limiting our study to first- and second-generation immigrants is that 95 percent of the students in our sample were raised in a home in which a language other than English was spoken. Therefore, our sample enables the analysis of the effect of delaying linguistic assimilation because almost all the students were exposed to a non-English language during childhood, while only some maintained proficiency in it.

Table 2 presents descriptive statistics for the variables used in this study. The dependent variables are scores on a standardized mathematics test (with mean of 50 and standard deviation of 10 for the whole sample) and a composite measure of self-reported grades. We used math test scores because they are most likely to reflect deductive thinking and underlying academic achievement rather than English-language fluency.

Other studies focusing on mathematical reasoning have found that bilingualism enhances mathematical aptitude (Dawe 1983). To supplement the standardized test scores, we also included grade-point averages. While grade-point averages undoubtedly reflect cross-school variation in grading practices, they also incorporate elements of effort and motivation not fully captured by the achievement-test scores.

The categorization of bilingual language status consistent with the cognitive model is depicted in Table 3. NELS contains self-reported measures of English and non-English-language ability for all students who reported that a non-English language was spoken at home. Previous research has suggested that self-reported language ability provides a reasonable measure of actual proficiency (Fishman 1969; Stolzenberg and Tienda 1997), and the NELS language questions are well designed (Valdés and Figueroa 1994). Students who reported that they spoke English “very well” are considered to be fluent in English, while students who reported that they spoke their native language “very well” or “pretty well” are coded as fluent in the non-English language. “Fluent bilinguals” are those students who are fluent in both English and their parents’ native language, while those students who are fluent in neither are “subtractive bilinguals.” Those students who are better in English or their native language are “English dominant” and “native-language dominant” respectively. According to the cognitive model, fluent bilinguals should have a cognitive advantage over English-dominant students.

Table 4. Percentage Distribution of Language Experience and Language Status by Asian Ethnic Group: First- and Second-Generation Asian American Students, NELS, 1988

Language Experience/Status	Asian Ethnic Group								Total
	Chinese	Filipino	Japanese	Korean	Southeast Asian	Pacific Islander	South Asian	Other Asian	
Language Experience Prior to Starting School									
Native language only	55.7	24.3	55.0	46.2	56.3	21.1	17.2	38.9	41.6
Native language first	28.1	22.0	25.0	30.8	16.3	31.6	16.2	20.4	23.0
English first	6.4	10.4	15.0	9.6	5.0	15.8	15.2	16.7	9.5
English only	9.9	43.4	5.0	13.5	22.5	31.6	51.5	24.1	26.0
Eighth-Grade Language Status									
English dominant	30.5	47.4	15.0	52.9	26.9	36.8	51.5	37.0	38.8
Fluent bilingual	37.4	34.1	50.0	30.8	36.9	47.4	39.4	40.7	36.8
Native-language dominant	21.7	12.1	30.3	7.7	23.8	10.5	4.0	16.7	15.9
Subtractive bilingual	10.3	6.4	5.0	8.7	12.5	5.3	5.1	5.6	8.5
Number of cases	203	173	20	104	160	19	99	54	832

RESULTS

Descriptive Results

Table 4 shows the eighth-grade language status for each Asian ethnic group. About one-third of the students in our sample are fluent bilinguals, but variation across the different ethnic groups is considerable. Only among Chinese, Japanese, and Southeast Asians is there a substantial percentage of students classified as "native-language dominant" (i.e., those who rated their native-language ability higher than their English ability). Despite the fact that 61 percent of the students in our sample were born overseas, only 24 percent are classified as native-language dominant or subtractive bilinguals. This is evidence of the shift toward English fluency among first- and second-generation Asian Americans.

Table 4 also shows the language experience of the sample subjects prior to starting school. Entries were calculated from information concerning the first and second languages they learned in their preschool years. About three-fourths of the students in the sample learned a non-English language before starting school, and 65 percent learned this language before learning English. Inter-ethnic variation is evident in patterns of lan-

guage acquisition. For example, despite the fact that about the same percentage of Chinese and Filipino students are first-generation immigrants (57 percent and 49 percent respectively), about one-half of the Chinese students did not learn English before starting school, in contrast to only one-fourth of the Filipino students. This is not surprising, given the different linguistic backgrounds of Chinese and Filipino immigrants and the widespread use of English in the Philippines (Galang 1988; Wong 1988). The highest level of English-language use in the preschool years is found among South Asians, of whom only 17 percent did not learn English before starting school.

Language experience in preschool years should influence children's language status in eighth grade (Table 5). Except for the group of students who learned only English before starting school, about 40 percent of the students in the sample were fluent bilinguals regardless of the order in which they learned the two languages. However, significantly more students who learned only their native language before starting school were classified as "native-language dominant" or "subtractive bilingual" by the time they had reached the eighth grade. In contrast, children who grew up in bilingual environments

Table 5. Percentage Distribution of Students' Eighth-Grade Language Status by Language Experience before Starting School and Parents' English Proficiency: First- and Second-Generation Asian American Students, NELS, 1988

Student's Experience/ Parents' Proficiency	Number of Cases	Eighth-Grade Language Status				Total Percentage
		English Dominant	Fluent Bilingual	Native- Language Dominant	Subtractive Bilingual	
<i>Language Experience Prior to Starting School</i>						
Native language only	346	24.0	39.0	26.0	11.0	100.0
Native language first	191	35.6	42.9	15.2	6.3	100.0
English first	79	49.4	41.8	.0	8.9	100.0
English only	216	61.6	25.9	6.0	6.5	100.0
Total	832	38.8	36.8	15.9	8.5	100.0
<i>Parents' English Proficiency</i>						
Not fluent	340	11.8	27.1	35.6	25.6	100.0
Fluent	492	47.0	37.6	9.2	6.3	100.0
Total	832	38.8	36.8	15.9	8.5	100.0

before starting school (i.e., native language first or English first) were more likely to achieve bilingual proficiency without experiencing any significant delay in the acquisition of English fluency.

Further, children's language status was constrained by the English ability of their parents—47 percent of the children with English-proficient parents were English dominant, as opposed to only 11.8 percent of those with parents who were not proficient in English. This indicates that children are more likely to be English dominant if their parents are proficient in English.

The NELS data include several variables measuring native-language use between students and their parents, siblings, classmates, and neighbors. Each of these variables has four possible responses, ranging from using the non-English language "always/most of the time" to "never."³ Table 6 shows the level of native-language use between students and their parents, by the student's eighth-grade language status and the parents' English pro-

ficiency.⁴ Because language-use patterns between parents and children in immigrant families are not always symmetric, we need to examine separately the language spoken by children to parents and the language spoken by parents to children. The upper panel of Table 6 shows the percentage of students who reported that their parents always/most of the time spoke their native language to them, cross-classified by student language status and parents' English proficiency. Likewise, the lower panel shows the percentage of students who always/most of the time spoke the native language to their parents. Clearly, the frequency of native-language use depends on the language abilities of both parents and children. Among the parents of fluent bilingual children, for instance, 71 percent of the

³ For the 5 percent of students in our sample who report that their family does not speak a language other than English at home, this information was not collected owing to questionnaire design—these variables are recoded to "never."

⁴ We have information only on English ability for the parent who answered the 1988 NELS parent questionnaire. The NELS measures of native-language use with both parents from the student questionnaire have been combined so that our native-language use variable corresponds to the parent who supplied the information on English ability in responding to the parent questionnaire. Models estimated using the next best alternative, language use with the student's mother, do not change the substantive conclusions. (Results are available from the authors on request.)

Table 6. Language Use within the Household According to Parent/Child Language Proficiency: First- and Second-Generation Asian American Students, NELS, 1988

Parent's English Proficiency	Student's Eighth-Grade Language Status				
	English Dominant	Fluent Bilingual	Native Language Dominant	Subtractive Bilingual	Collapsed
<i>Percentage of Parents Speaking Native Language "Always" or "Most of the Time" with Their Children</i>					
Parent not fluent in English	45.6 (92)	71.0 (121)	88.5 (87)	55.0 (40)	66.7 (340)
Parent fluent in English	16.5 (231)	54.1 (185)	62.2 (45)	29.0 (31)	35.6 (492)
Total percentage	24.8 (323)	60.8 (306)	79.5 (132)	43.7 (71)	48.3 (832)
<i>Percentage of Children Speaking Native Language "Always" or "Most of the Time" with Their Parents</i>					
Parent not fluent in English	16.3 (92)	66.1 (121)	80.5 (87)	40.0 (40)	53.2 (340)
Parent fluent in English	4.8 (231)	38.3 (185)	66.7 (45)	19.4 (31)	23.9 (492)
Total percentage	8.0 (323)	49.3 (306)	77.3 (132)	31.0 (71)	35.9 (832)

Note: Number of cases are in parentheses.

parents who were not fluent in English used their native language the majority of the time with their children as opposed to 54.1 percent of those parents who were fluent in English. The inclusion of these variables in the NELS data allows us to contextualize the effects of language on achievement as the product of both language ability and language use within the household. Table 6 also shows the association between eighth-grade language status, language use with parents, and parents' English proficiency—the key language variables used in our multivariate analysis. Although language use is closely associated with language proficiency, the upper panel of Table 6 indicates that multicollinearity is not a problem because there is sufficient heterogeneity in patterns of language use within the household, even among immigrant families in which children and parents have similar levels of English and native-language abilities.⁵

⁵ Not presented here are data concerning the other language use variables collected in the study. Native-language use with siblings, for instance, is closely connected to eight-grade language status but occurs with much lower fre-

quency than parent-child native-language use. Also not included are analyses that show that native-language use in one's neighborhood has a significant negative association with academic achievement. This result is most likely the product of unobserved factors related to living in ethnically segregated neighborhoods rather than any direct effect on achievement. In any event, we restrict our attention here to the effect of language use within the family.

Table 6 indicates that students tend to use their native language less often when speaking to their parents than their parents do with them. Despite the fact that both parents and children are more likely to use the native language for communication when the parent is not fluent in English, the extent of parents' native-language use is still significant even when the parents report that they speak English "pretty well" (35.6 percent of English-proficient parents speak their native language always/most of the time to their children).

Because the two measures represented in the two panels of Table 6 contain overlapping information, we use the measure of parents speaking to children as the indicator of language use within the family in our multivariate analysis. This measure is more closely related to the measure of parents speaking to children than the measure of parents speaking to their children. This measure is more closely related to the measure of parents speaking to their children than the measure of parents speaking to their children.

ate analysis.⁶ Given the relative difficulty that parents have in speaking English, it is more important to know what language the parents speak at home. If parents speak English well, it is inconsequential for communication purposes which language the child speaks. The primary constraint on effective communication comes, however, if the parent is better at communicating in the native language than in English and the child is undergoing intense English-language socialization at school and feels less comfortable with the native language. As the child's English-language assimilation progresses, there may come a time when the parent feels compelled to switch to English when speaking to the child, even though the parent may continue to speak to his or her spouse in their native language. It is this heterogeneity in parents' English-language use that makes our transitional hypothesis testable: Contingent upon parent and child language ability, can too rapid a switch to English be detrimental to family social capital?

Regression Results

We turn to regression analysis to test the various effects of bilingualism as hypothesized in Table 1. Table 7 presents the results of two regression models using math scores as the dependent variable. Both Models 1 and 2 include controls for socioeconomic status, demographic characteristics, and ethnic differences. The difference lies in specification of language effects. Model 1 specifies the additive effects for the student's eighth-grade language status, whereas Model 2 adds native-language use, parents' English proficiency, and the interaction term between native-language use and parents' English ability. Given the nested structure of the two models, an F-test for the incremental improvement in goodness-of-fit shows that Model 2 fits the data significantly better than Model 1 ($F = 8.46$, $d.f. = 3,810$). The key parameters corresponding to the hypothesized effects in Table 1 are highlighted. The effect of fluent bilingualism on academic achievement (math scores) in Model 1 is estimated to be signifi-

cantly *negative*. This is surprising because Model 1 includes a battery of standard measures of the parents' socioeconomic status (education and income) collected in NELS. It is possible but unlikely that the effect of bilingualism is biased downward because of an association with social class, unless the unmeasured component of social class is systematically lower for bilingual students. However, the income of recent immigrants is likely to underestimate their true socioeconomic status because they may experience temporary underemployment after immigration. This underestimation would *upwardly* bias estimates of the coefficient on bilingualism because recent immigrants are more likely to be bilingual than English dominant. Another possibility is that our definition of bilingualism was too inclusive and resulted in an inaccurate measure of bilingual status. However, even when the analysis was run with the most restrictive definition of fluent bilinguals possible in the data—the 170 students in the first cell (1,1) of Table 3—the negative association between bilingualism and achievement remains unchanged (results not shown).

In Model 2, however, the coefficient for native-language use (by parents with children) is positive, while the interaction term between native-language use and parent's English proficiency is negative and roughly of the same magnitude. This indicates that native-language use has a *positive effect* on achievement if parents are not proficient in English and virtually *no effect* if parents are proficient in English. The magnitude of the positive effect for parents with poor English ability is large (coefficient = 5.32, S.E. = 1.15). This effect is the equivalent of about one-half a standard deviation for the math scores. Consistent with our hypothesis of a transitional effect, the coefficient on the interaction term between native-language use and parents' English proficiency is negative (−3.97) and it effectively cancels the positive coefficient for native-language use. This means that, if a student's parents are proficient in English, there is no statistically significant positive effect of communication in their native language.⁷

⁶ Inclusion of children speaking to parents in regression models does not contribute any additional explanatory power.

⁷ Measuring the effect of native-language use if parents are proficient in English, the combina-

Table 7. Coefficients from the Regression of Eighth-Grade Math Scores on Selected Independent Variables: First and Second-Generation Asian American Students, NELS, 1988

Independent Variables	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
<i>Eighth-Grade Language Status</i>				
Subtractive bilingual	-3.91*	(1.39)	-4.10*	(1.38)
Fluent bilingual	-2.62*	(.78)	-3.23*	(.80)
Native-language dominant	-2.22	(1.18)	-3.42*	(1.20)
Native-language use by parents	—	—	5.32*	(1.15)
Parents' English proficiency	—	—	1.17	(1.14)
Parents' native-language use × Parents' English proficiency	—	—	-3.97*	(1.42)
Male	2.16*	(.67)	2.33*	(.66)
Immigrant	-.52	(1.85)	-1.67	(1.85)
Years since immigration	-.13	(.38)	.07	(.38)
Parents' education (in years)	1.05*	(.15)	1.17*	(.15)
Family income (ln)	1.69*	(.40)	1.80*	(.39)
Family income missing	-3.29	(1.99)	-3.51	(1.97)
<i>Ethnicity</i>				
Filipino	-8.65*	(.99)	-7.93*	(1.02)
Japanese	.08	(2.24)	-.59	(2.22)
Korean	1.06	(1.21)	.91	(1.19)
Southeast Asian	-2.18	(1.16)	-2.26*	(1.14)
Pacific Islander	-8.51*	(2.24)	-7.29*	(2.27)
South Asian	-4.15*	(1.17)	-3.65*	(1.17)
Other Asian	-3.76*	(1.41)	-3.44*	(1.40)
School socioeconomic status	.58	(.59)	.44	(.58)
Constant	27.69*	(4.07)	22.77*	(4.14)
Number of cases	832		832	
R ²	.302		.323	

Note: Numbers in parentheses are standard errors. Reference categories are "English dominant" for eighth-grade language status and Chinese for ethnicity. □ Indicates effects hypothesized in Table 1.

* $p < .05$ (two-tailed tests)

Table 8 shows similar results for two parallel models, using grade-point average as the dependent variable measuring academic achievement. The effect of fluent bilingualism is not statistically significant in both Models 1 and 2. Although this result is slightly different from that for math scores in Table 7, we can safely draw a common conclusion that there is no positive effect of

bilingualism on achievement for Asian Americans. This is in sharp contrast to the hypotheses derived from both the cognitive perspective and the cultural perspective, which predict a positive association between fluent bilingualism and academic performance. Model 2 in Table 8 also shows significant improvement over Model 1 ($F = 5.93$, $d.f. = 3,803$). Again, the coefficient for native-language use between parents and children is significantly positive for students whose parents have limited English proficiency (coefficient = .317, $S.E. = .075$), and

tion of the two coefficients is $5.32 - 3.97 = 1.35$ ($S.E. = .944$). This effect is not statistically different from zero ($p = .153$).

Table 8. Coefficients from the Regression of Eighth-Grade Grade-Point Average on Selected Independent Variables: First and Second-Generation Asian American Students, NELS, 1988

Independent Variables	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
<i>Eighth-Grade Language Status</i>				
Subtractive bilingual	-.412*	(.092)	-.405*	(.091)
Fluent bilingual	-.082	(.051)	-.099	(.052)
Native-language dominant	-.167*	(.077)	-.215*	(.078)
Native language use by parents	—	—	.317*	(.075)
Parents' English proficiency	—	—	.194*	(.075)
Parents' native-language use × Parents' English proficiency	—	—	-.313*	(.094)
Male	-.042	(.044)	-.037	(.043)
Immigrant	.079	(.120)	.044	(.121)
Years since immigration	-.009	(.025)	-.002	(.025)
Parents' education (in years)	.060*	(.010)	.063*	(.010)
Family income (ln)	.007	(.027)	.009	(.027)
Family income missing	-.099	(.129)	-.096	(.128)
<i>Ethnicity</i>				
Filipino	-.188*	(.065)	-.181*	(.067)
Japanese	-.219	(.145)	-.263	(.144)
Korean	.009	(.079)	.000	(.078)
Southeast Asian	.111	(.075)	.113	(.075)
Pacific Islander	-.381*	(.145)	-.367*	(.148)
South Asian	-.008	(.076)	-.007	(.077)
Other Asian	-.193*	(.093)	-.188*	(.093)
School socioeconomic status	.024	(.043)	.024	(.043)
Constant	2.522*	(.281)	2.282*	(.286)
Number of cases	825		825	
R ²	.151		.170	

Note: Numbers in parentheses are standard errors. Reference categories are "English dominant" for eighth-grade language status and Chinese for ethnicity. □ Indicates effects hypothesized in Table 1.

* $p < .05$ (two-tailed tests)

this positive effect is reduced to 0 by the negative interaction parameter between native-language and parents' English proficiency (–.313).

Our findings are at odds with the earlier results of Fernandez and Nielson (1986), who used data on Hispanic students from the 1980 wave of the High School and Beyond study. They found that after controlling for English proficiency and socioeconomic status, Spanish-language *ability* had a positive effect on achievement, while Spanish-language *use* had a negative effect. They sug-

gest that speaking Spanish may delay assimilation to Anglo culture, stigmatize Spanish-speaking students, or increase the cognitive cost of frequent code-switching between Spanish and English. Taking Fernandez and Nielson's results literally means that immigrant parents do best to teach their children their native language but never speak it to them. This would be somewhat contradictory advice for parents. Results from our sample of first- and second-generation Asian students, in contrast, indicate that native-language use results in significant positive ef-

fects on achievement if parents are not proficient in English, and no effect if parents are proficient in English.

Our findings support the transitional theory of bilingualism—there is evidence that native-language use between parents and children is important only when the parents have not yet completed their linguistic assimilation. The pressures for English-language assimilation at school may be intense, and the danger is that children may switch to speaking English at home before their parents are sufficiently fluent in English. This may result in communication difficulties between parents and children. Indeed, from Table 6 we see that 46.8 percent of the students in our sample whose parents were not fluent in English rarely spoke to their parents in their native language, and 33 percent of those parents spoke to their children primarily in English. Our results indicate that in cases such like these, a premature transition to English-language communication within the home may detract from academic performance. However, once parents achieve a moderate level of English proficiency, it makes little difference what language they speak. In this sense, the cultural perspective is misleading because it suggests unconditional constancy in the benefits of bilingual language proficiency and use, at least among first- and second-generation students. In contrast, our results demonstrate the transitional importance of bilingualism.

SENSITIVITY ANALYSIS

Are the results obtained in our analysis peculiar to Asian Americans or generalizable to other groups? To answer this question, we conducted a sensitivity analysis by replicating the regression results using seven subsamples/specifications from the 1988 NELS data (see Table 9): (1) all students, (2) all Asian American students, (3) all Hispanic students, (4) all first- and second-generation students, (5) first- and second-generation Asian American students, (6) first- and second-generation Hispanic students, and (7) first- and second-generation Asian American students using a definition of bilingualism based on literacy rather than speaking ability. Table 9 presents the results of Models 1 and 2 (as specified in Tables 7 and 8) with

standardized math scores as the measure for academic achievement. For Model 1, the estimated effect of fluent bilingualism is zero for the full sample, negative for Asians, and slightly positive for Hispanics. For first- and second-generation Hispanic students, the coefficient for fluent bilingual is 1.45 ($p < .05$). However, the positive effect of bilingual proficiency for this group in Model 1 becomes nonsignificant when we control for native-language use by parents in Model 2. This means that a researcher who modeled the effect of language proficiency among Hispanics might find a significant positive result, although the positive result may be spurious because of the confounding role of language use within the home rather than bilingual language ability. Throughout all the replications, the coefficients for fluent bilingualism in Model 2 are either negative or not statistically different from zero, suggesting that bilingual ability per se does not improve children's academic performance.

In contrast, what is striking about the sensitivity analysis in Table 9 is the uniformity of the results with respect to the effect of language use on achievement. For all of the subsamples/specifications, native-language use by parents with children has a statistically significant positive effect on achievement if the parents are not proficient in English. Moreover, this effect almost entirely disappears when parents achieve a modicum of English-language proficiency. This is true even for those subsamples consisting only of students who are first- and second-generation immigrants. Among these students, fluent bilingual ability does not represent a cognitive advantage, and the benefit of delayed linguistic assimilation does not hold once parents develop English proficiency.

Replication 7 in Table 9 uses writing ability rather than speaking ability as the measure of language proficiency. This restrictive definition of bilingualism results in only 15 percent of the sample being classified as bilingual. Because achieving literacy in both languages is likely to be highly selective on the basis of student ability and parental resources, this would probably correspond to a situation in which the coefficient on fluent bilingualism is upwardly biased. Nonetheless, the effect of fluent bilingualism on math scores is not statistically significant in either

Table 9. Coefficients from the Regression of Eighth-Grade Math Scores on Selected Independent Variables: Selected Ethnic Groups from NELS, 1988

Model/Variable	All Eighth-Grade Students			First- and Second-Generation Eighth-Grade Students ^b			
	(1) All	(2) Asian ^a	(3) Hispanic ^a	(4) All	(5) Asian	(6) Hispanic	(7) Asian ^c
Number of cases	21,624	1,026	2,105	2,079	832	893	831
MODEL 1							
Fluent bilingual	-.01 (.28)	-2.73* (.71)	.24 (.37)	-.86 (.46)	-2.62* (.78)	1.45* (.69)	.10 (1.02)
MODEL 2							
Fluent bilingual	-.43 (.31)	-3.56* (.74)	-.03 (.42)	-1.57* (.50)	-3.23* (.80)	.65 (.73)	.29 (1.02)
Native-language use by parents	3.06* (.57)	5.62* (1.07)	2.60* (.55)	3.78* (.61)	5.32* (1.14)	2.92* (.72)	5.03* (1.14)
Parents' English proficiency	.98* (.47)	1.78 (1.03)	1.40* (.54)	1.87* (.65)	1.17 (1.14)	1.79* (.88)	1.39 (1.15)
Parents' native- language use × Parents' English proficiency	-2.43* (.69)	-4.07* (1.33)	-3.06* (.74)	-2.83* (.82)	-3.97* (1.42)	-2.50* (1.10)	-4.74* (1.44)

Note: Numbers in parentheses are standard errors. Each model includes the full set of variables presented in the corresponding models in Tables 7 and 8. Only the estimated coefficients for the language variables are presented here. The subsamples are restricted to those cases which had complete parent questionnaires.

^a Results are based on subsamples in which the student's self-reported race is the same as their parents'.

^b Results are based on subsamples of students who are first- and second-generation immigrants and whose self-reported race is the same as their parents'.

^c Analysis 7 uses a definition of student's bilingualism based on *writing* proficiency rather than speaking proficiency, as used in the other analyses (see Table 3).

* $p < .05$ (two-tailed tests)

Model 1 or 2. Still, the pattern associated with native-language use remains unchanged. Taken as a whole, Table 9 demonstrates that our earlier results pertaining to first- and second-generation Asian American children are generalizable to all relevant subpopulations of the NELS data. For every replication, there is no evidence that fluent bilinguals perform significantly better than their English monolingual peers. Rather, native language use has a substantial positive effect only for students whose parents have limited English proficiency.

DISCUSSION AND CONCLUSION

This study is different from many other studies of bilingualism because it does not focus directly on the effectiveness of bilingual edu-

cation. Instead, we study first- and second-generation Asian American students who have similar language backgrounds but different eighth-grade language abilities. We direct our attention to comparing the academic performance of fluent bilinguals with that of students who speak only English fluently. Our objective is to present a critique of the recent literature on immigrant adaptation claiming that fluent bilinguals *always* have an advantage over other students because of either the cognitive or cultural benefits of being bilingual. Because we do not model the process by which students attain English-language fluency, our study has only some indirect bearing on the issue of bilingual education. However, our results do point to the importance of bilingual education, for it not only facilitates the linguistic transition of

immigrant children but also helps reduce the possibility of a language gap between students and parents.

We find no evidence that fluent bilinguals do better than students who are fluent only in English. Nonetheless, our results should be qualified by the fact that we analyze only eighth graders and cannot definitively say what the effects are at other ages. In addition, our measures of achievement—standardized math test score and grade point average—may not be sensitive to the way in which bilingualism promotes cognitive development. Although this may be true, we note that these measures are sensitive enough to pick up the significant effect of language use on achievement. Further, the fact that native-language use has a positive effect only when parents are not proficient in English indicates that the importance of bilingualism is a result of the functional ability to communicate with parents, rather than the maintenance of ethnic identity and culturally specific values and behaviors.

In conclusion, we emphasize the need to challenge the prevailing perspectives on the role of bilingualism in the educational attainment of the children of immigrants. Instead of studying the blanket effect of bilingualism, we argue that it is more fruitful to examine the social context of language use and the relations within the household between immigrant parents and their children. In contrast to the cultural perspective, which suggests that delaying linguistic assimilation may be a means of utilizing ethnicity as a form of social capital, we find substantial evidence that the benefits of native-language use are almost entirely contingent on the parents' lack of English-language proficiency. As far as language is concerned, the importance of resisting assimilation in order to achieve upward mobility is largely transitional. There are, nonetheless, significant temporary benefits to delaying full linguistic assimilation, provided that first- and second-generation children also achieve English-language proficiency. However, when immigrant parents achieve even a moderate level of English ability, it does not matter what language they speak to their children. The language they choose to speak to their children may be determined by the intrinsic or symbolic value they attach to their

children's maintenance of the ethnic language, but their choice does *not* have a tangible effect on their children's academic achievement, at least as measured at the eighth grade.

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