The Forgotten Treasure: Bilingualism and Asian Children's Emotional and Behavioral Health

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Objectives. We investigated the relation between the language status of children and their behavioral and emotional well-being during their early school years.

Methods. Behavioral and emotional well-being were drawn from teacher-reported data and included externalizing and internalizing behaviors. Three-level growth curve analyses were conducted on a subsample (n=12586) of children from the Early Childhood Longitudinal Study, kindergarten cohort, who originated from Asian countries. US-born, non-Hispanic White children served as the comparison group.

Results. All children started with a similar level of internalizing and externalizing behaviors at kindergarten entry. The growth rate of problem behaviors was slowest in fluent bilingual and non–English-dominant bilingual children compared with White English-monolingual children. By contrast, problem behaviors increased at a significantly faster rate in non–English-monolingual children, who had the highest level of problem behaviors among all children by fifth grade.

Conclusions. By fifth grade, fluent bilingual and non–English-dominant bilingual children had the lowest levels of internalizing and externalizing behaviors, whereas non–English-monolingual children had the highest levels of both behavior problems. Our data suggest emotional and behavioral benefits of being bilingual. (*Am J Public Health.* 2010;100:831–838. doi:10.2105/AJPH.2009.174219)

Primarily because of the growth in the number of Asian and Latino immigrants to the United States, the use of non-English languages at home has increased significantly over the past few decades, and children of immigrants will account for most of the growth in the school-aged population by 2050.[1] The rise in the number of English-language-learner students, along with their academic struggles, has sparked debate about how to improve these children's school performance. Although it is understandable that policies have focused on academic achievement, children's emotional and behavioral well-being cannot be overlooked, because children who are suffering in these areas are also likely to suffer academically.[2]

The early school years are a pivotal time marked by an increased ability to reason and new levels of peer competition. As school progresses, children may receive "failure feedback," which can result in decreased confidence in their abilities or future success and negative educational trajectories.[3] These patterns may be felt more acutely by English-language-learner children, who are often experiencing not only their first nonfamilial social environment but also their first new cultural environment. The negative effects of social comparison and failure feedback may have unique implications for students who are beginning to see their own cultural identities as different from those of their peers. In addition, early behavior or peer problems in school have been linked to an increased probability of later dropout and delinquency.[4–8] This issue is of special importance for young children given the plasticity of the trajectories of behavioral and emotional well-being during the early school years.[9–12]

The natural conclusion is that English-only instruction is the best way to improve English-language-learner students' communication with their peers and teachers and to avoid failure feedback; this type of instruction, in fact, has been the primary focus of education policies. However, more than 2 decades have passed since researchers began to document what they call the "immigrant paradox": immigrants generally do well in American society, despite having to navigate a new culture and language and often having few economic resources, although this success often is not sustained by later generations.[13,14] As children become more Americanized (acculturated), they lose the protective features of their home culture, which often highly values education and familial respect. Moreover, they become increasingly reluctant to speak their family's language.[14,15] This is detrimental, because a growing body of research has documented the benefits of bilingual fluency to various academic outcomes,[15–21] higher self-esteem,[17] and stronger family cohesion.[17,22] Scholars have generally explained bilingualism's positive effects through its relationship with greater cognitive flexibility and abstract thinking skills[23–26] and through the access bilingual children have to positive "cultural capital" in their families and communities.[27–32] These results challenge the notion that a rapid shift to monolingual English fluency is best for these children's well-being.

Asian and Latino children have been and are projected to be rapidly growing ethnic groups in the United States and often do not speak English at home. However, previous studies found that second-generation Asian youths are less likely than Latino youths to preserve their parents' linguistic heritage.[15] Furthermore, Asian children have long been considered a "model minority" given their generally better academic achievement compared with other children of immigrants and sometimes compared with mainstream peers as well. However, relatively less is known about Asian children's health and emotional well-being during their early school years. For these reasons, we chose to focus on Asian children in the present study. Specifically, we were interested in examining how being bilingual may shape Asian children's long-term emotional well-being and how bilingualism may be a strength that policymakers can draw upon in their efforts to promote

children's success in school. Building on previous studies of bilingualism,[2,15,17,18] we assessed the net effects of language status on children's well-being in models that were controlled for a large set of child, family, and school characteristics, along with children's reading ability because of its obvious relation with language proficiency and children's emotional well-being.

METHODS

These analyses were based on the Early Childhood Longitudinal Study, kindergarten cohort (ECLS-K), a large, contemporary cohort of children who entered kindergarten in the 1998–1999 school year and who have been followed longitudinally through eighth grade. Children were drawn randomly by use of a multistage probability design from a nationally representative sample of roughly 1000 US public and private schools (n=21 260 in the fall of kindergarten in 1998 and n=11 820 in the spring of fifth grade, per the publicly available data as of this writing). The ECLS-K collected information on children's language proficiency at school entry and the language spoken between the parents and child at home. The ECLS-K is the only national data set able to evaluate the relation between children's language status during their early school years and their developmental trajectories.

The present study included 12 580 children (1520 children with family roots in Asian regions and 11 060 US-born, non-Hispanic White children). Fourteen percent spoke a non-English language at home, and about 50% were males.

Measures

Behavioral problems were drawn from teacher-reported data and included externalizing (the frequency of arguing, fighting, getting angry, acting impulsively, and disturbing ongoing activities) and internalizing (the apparent presence of anxiety, loneliness, low self-esteem, and sadness) behaviors. These measures have been widely used with good reliability and validity.[33] A standardized *z* score with a mean of zero and standard deviation of 1 was computed for each of the outcomes.

For immigrant generation status and race/ethnicity, both the mother and the father reported whether they were born in the United States, whether the child was born in the United States, and the country of origin if born outside the United States. Families were coded as immigrant if they had at least 1 foreign-born parent, and children were coded as first-generation immigrants if they were not born in the United States and had at least 1 foreign-born parent. Children were coded as second-generation if they were born in the United States but had at least 1 foreign-born parent. Four Asian regions were categorized by single countries and by grouping countries with similar cultures or refugee histories[34]: East Asia (e.g., China, Japan, Korea); Vietnam, Thailand, Cambodia, and Laos; other Southeast Asia (e.g., Indonesia, Malaysia, Philippines); and India. A total of 1032 children were identified as either first- or second-generation children of immigrants. About two thirds of these children came from Southeast Asia, and 24% and 12% came from East Asia and India, respectively. A total of 491 Asian children were third or later generations.

Children's language status was measured by the combination of the language they spoke at home and their English proficiency as measured at school entry. With respect to the home language, the ECLS-K collected information in the fall of kindergarten on 4 directions of language interaction between the parents and child: mother's language spoken to child, father's language spoken to child, child's language spoken to mother, and child's language spoken to father. Each of these 4 interaction pairs consists of 4 possible language-use patterns: never, sometimes, often, or very often speaks the native language. The second part of the determination of children's language status came from their English proficiency at school entry, as determined by whether they were administered and passed the Oral Language Developmental Scale (OLDS) test.[35] This measure was combined with children's language use at home with the mother to create 5 dummy variables that represented children's language status. English-monolingual children were defined as those who never spoke a non-English language to their parents and either did not need to take the OLDS test or passed the OLDS test at kindergarten entry. Children who sometimes spoke a non-English language to their parents and either did not need to take the OLDS test or passed the test at kindergarten entry were defined as English-dominant bilingual. Children who often or very often spoke a language other than English to their parents and either did not need to take the OLDS test or passed the OLDS test by the end of kindergarten were defined as fluent bilingual. Children who sometimes, often, or very often spoke a language other than English to their parents and passed the OLDS test at the end of first grade were defined as non–English-dominant bilingual. Children who did not pass the OLDS test by the end of first grade were defined as non-English monolingual no matter how often they spoken a language other than English at home. The distribution of language groups by country of origin is presented in Table 1.

Direct assessments of reading competence were collected in one-on-one testing sessions by using an Item Response Theory (IRT) approach. A standardized *t* test (mean=50; SD=10) was used for reading ability via a transformed measure of the IRT scale score. This norm-referenced score represented children's abilities relative to their average peers nationwide (i.e., children who entered kindergarten in the fall of 1998), and a change in mean *t* scores over time reflected a change in relative ability.

The school setting was measured by 14 variables across 5 constructs: English as a second language (ESL) instruction and services, school resources, student learning environment, school support and teaching environment, and work climate. We focused on these areas because the effective-schools literature has shown that they are important to students' academic performance.[36–38] The duration and frequency of ESL instruction per week, the number of Title I–related services (e.g., family literacy services), teachers and school administrators' ESL or bilingual-related experience, and the number of services or programs provided to ESL families were used as proxies for ESL instruction and services. The type of school (public versus private), poor or minority student composition, and the school's physical resources (e.g., if school facilities, such as the library, met students' needs) were used as proxies for school resources. The following were used as proxies of the student learning environment: teachers' opinions of the school's academic standards; school stability (i.e., the school administrator's reports on teacher absenteeism, teacher turnover, and child absenteeism); the learning environment as observed by field researchers

TABLE 1—Percentage Language Fluency at Time of School Entry, by Country of Origin: Early Childhood Longitudinal Study, Kindergarten Cohort, United States, 1998–2004

	English Monolingual, %	English-Dominant Bilingual, %	Fluent Bilingual, %	Non–English-Dominant Bilingual, %	Non-English Monolingual, %	Total, %
US-born, non-Hispanic White (n = 11 060)	97.68	1.57	0.75	0	0	100
Asian origin and US-born Asian (n = 1520)						
East Asia (n = 250)	19.35	22.98	42.34	11.69	3.63	16.28
Thailand/Vietnam/Cambodia/Laos (n = 320)	5.86	17.90	50.00	19.75	6.48	21.27
Other Southeast Asia (n = 330)	41.52	32.73	17.58	6.06	2.12	21.67
India (n = 130)	25.38	29.23	36.15	6.15	3.08	8.54
US-born Asian (n = 490)	25.87	19.76	16.70	26.48	11.20	32.24

(e.g., decorated hallways, attentive teachers); average student academic performance, which was a standardized score of the percentage of students who had reading and verbal skills and math and quantitative skills at or above grade level; and teacher's effort (e.g., teachers' reports on how often they sent information home to parents). School support and teaching environment was a standardized score of 12 items asking teachers questions such as whether staff accepted them as colleagues and whether the school administrator communicated the school's vision. Finally, school work climate was a standardized score of 6 items asking the school administrator whether, for instance, the school-based management committee was helpful and whether order and discipline were maintained.

Time-invariant variables collected in the fall of kindergarten included the child's gender, birth weight, attendance in center-based care before kindergarten, parents' marital status at birth, and parental education (the mother or father, whoever had the higher education level). Time-variant variables were collected at all interview points and included the presence of siblings in the household, the number of people under age 18 years in the household, living in a single-parent family, family socioeconomic status (calculated from family income, parental education, and occupation), parental educational expectations, home environment, parental school involvement, region (e.g., northeast), and location of residence (i.e., city, suburban, or rural).

Empirical Strategy

Rates of missing data were generally less than 4% for demographic and family characteristics. Rates were higher for school factors but generally below 20%. The growth curve modeling used in this analysis handled such unbalanced data well, because students did not have to be assessed at all data points to be included in the analysis.[39] Still, multiple imputation (with Stata's ICE command; Stata version 9.0, StataCorp LP, College Station, TX) was used to handle missing data with 5 imputed data sets.

Three-level growth curve modeling was used to estimate the associations between language status and children's behavioral and emotional health trajectories. Analyses were estimated with level 1 as time (i.e., within-individual effects), level 2 as individuals (i.e., between-individual and within-school effects), and level 3 as schools (i.e., between-school effects). With longitudinal data involving 5 assessment points, children's developmental trajectories (growth and decay curves) were estimated instead of the individual time points typically used in multivariate regression models. Such growth curve models can compare the growth rate of each group to determine which had faster or slower paces over time. The variance components allowed us to determine the share of variation in outcome explained by each level. All continuous variables were centered at their grand mean values, except the dummy variables (e.g., attending public school), so that the reference child represented a realistic scenario.[39] In addition, the variable *time* was centered so that initial status would refer to the fall of kindergarten, which is the true starting point. US-born, non-Hispanic White, English-monolingual children (hereafter, White English-monolingual children) were the reference group. For brevity's sake, the estimates for child, family, and school characteristics were not presented.

RESULTS

In the interest of space, we did not present the descriptive data, but some trends are worth noting. Compared with White children, Asian children were more likely to live with married parents with high educational expectations but tended to have lower socioeconomic status (except for English-monolingual Asians). Asian children were more likely to attend schools with lower achievement, more minorities, poorer learning environments, and less teacher support (but more ESL programs and related services). Among the Asian groups, non–English-monolingual children had the most disadvantageous family and school characteristics; this group tended to originate from Thailand, Vietnam, Cambodia, and Laos. The raw scores of the children's behavioral problems by language group from kindergarten to fifth grade are provided in Table 2.

Table 3 shows the estimates from the growth curve analyses on the internalizing and externalizing behavior trajectories from kindergarten to fifth grade. About 34% of the variation in levels of internalizing behavior problems was attributable to differences among children and 9% to differences among schools. The corresponding numbers for externalizing behaviors were 60% and 6%, respectively.

TABLE 2—Raw Scores of Internalizing and Externalizing Behavior Problems Among Children From Kindergarten to Fifth Grade, by Language Group: Early Childhood Longitudinal Study, Kindergarten Cohort, United States, 1998–2004

	Fall Kindergarten, Raw Score (SD)	Spring Kindergarten, Raw Score (SD)	Spring First Grade, Raw Score (SD)	Spring Third Grade, Raw Score (SD)	Spring Fifth Grade, Raw Score (SD)	% Change (SD)
Internalizing behavior problems[a]						
US-born, non-Hispanic White						
English monolingual (n = 10 850)	1.54 (0.52)	1.56 (0.51)	1.60 (0.51)	1.65 (0.53)	1.68 (0.54)	0.14 (9.09)
English-dominant bilingual (n = 150)	1.56 (0.46)	1.57 (0.48)	1.70 (0.53)	1.66 (0.52)	1.72 (0.57)	0.16 (10.26)
Fluent bilingual (n = 60)	1.61 (0.50)	1.74 (0.50)	1.89 (0.63)	1.67 (0.48)	1.72 (0.60)	0.11 (6.83)
Total (n = 11 060)	1.54 (0.52)	1.57 (0.51)	1.61 (0.51)	1.65 (0.53)	1.68 (0.54)	0.14 (9.09)
Asian origin including US-born Asian						
English monolingual (n = 380)	1.56 (0.49)	1.53 (0.43)	1.54 (0.40)	1.54 (0.50)	1.61 (0.45)	0.05 (3.20)
English-dominant bilingual (n = 340)	1.42 (0.44)	1.50 (0.46)	1.51 (0.47)	1.54 (0.44)	1.58 (0.54)	0.16 (11.27)
Fluent bilingual (n = 460)	1.45 (0.45)	1.46 (0.45)	1.52 (0.47)	1.50 (0.48)	1.60 (0.52)	0.15 (10.34)
Non–English-dominant bilingual (n = 110)	1.61 (0.55)	1.63 (0.56)	1.52 (0.50)	1.56 (0.50)	1.58 (0.49)	-0.03 (1.86)
Non-English monolingual (n = 230)	1.61 (0.58)	1.58 (0.47)	1.78 (0.63)	1.55 (0.53)	1.66 (0.54)	0.05 (3.01)
Total (n = 1520)	1.52 (0.50)	1.53 (0.48)	1.54 (0.48)	1.53 (0.49)	1.60 (0.50)	0.08 (5.26)
Externalizing behavior problems[b]						
US-born, non-Hispanic White						
English monolingual (n = 10 850)	1.63 (0.63)	1.64 (0.62)	1.66 (0.61)	1.68 (0.58)	1.69 (0.58)	0.06 (3.68)
English-dominant bilingual (n = 150)	1.58 (0.56)	1.72 (0.68)	1.73 (0.64)	1.65 (0.57)	1.73 (0.58)	0.15 (9.49)
Fluent bilingual (n = 60)	1.54 (0.60)	1.69 (0.62)	1.85 (0.68)	1.68 (0.57)	1.76 (0.65)	0.22 (14.28)
Total (n = 11060)	1.63 (0.63)	1.65 (0.62)	1.66 (0.61)	1.68 (0.58)	1.69 (0.58)	0.06 (3.68)
Asian origin including US-born Asian						
English monolingual (n = 380)	1.57 (0.63)	1.58 (0.57)	1.59 (0.60)	1.58 (0.57)	1.63 (0.58)	0.06 (3.82)
English-dominant bilingual (n = 340)	1.51 (0.54)	1.56 (0.60)	1.54 (0.54)	1.55 (0.52)	1.59 (0.58)	0.08 (5.30)
Fluent bilingual (n = 460)	1.47 (0.53)	1.49 (0.56)	1.53 (0.54)	1.56 (0.53)	1.55 (0.56)	0.08 (5.44)
Non–English-dominant bilingual (n = 110)	1.57 (0.57)	1.54 (0.56)	1.49 (0.50)	1.62 (0.59)	1.48 (0.61)	-0.08 (5.73)
Non-English monolingual (n = 230)	1.53 (0.59)	1.56 (0.60)	1.61 (0.62)	1.45 (0.54)	1.52 (0.64)	-0.01 (0.65)
Total (n = 1520)	1.53 (0.57)	1.54 (0.57)	1.55 (0.55)	1.56 (0.55)	1.56 (0.59)	0.03 (0.96)

Note. Raw scores are unadjusted. Internalizing and externalizing behaviors are each assessed on a scale ranging from 1 = never to 4 = very often; the externalizing and internalizing scale scores are then averaged to find the raw score.
[a]The frequency of arguing, fighting, getting angry, acting impulsively, and disturbing ongoing activities; drawn from teacher-reported data.
[b]The apparent presence of anxiety, loneliness, low self-esteem, and sadness; drawn from teacher-reported data.

The results in Table 3 indicate that the average child's behavior trajectory for internalizing problems was nonzero (b=0.076; P<.05) and had a strong slope (b=0.049; P<.001), indicating an increase through grades. However, language status was not significantly associated with internalizing behavior problems or the growth rates of those problems. There was 1 interaction of note: although reading scores were not significantly related to the initial level of internalizing problems, having better scores over time contributed to a significantly slower increase in internalizing problems from kindergarten to fifth grade.

For externalizing behavior problems, the average child's behavior trajectory was nonzero (b=0.089; P<.05) with a strong positive slope (b=0.022; P<.001), revealing an increase through grades. Although language status was not significantly associated with externalizing problems, non–English-dominant bilingual children were reported to have slower growth rates of these problems and decreasing rates of change from kindergarten to fifth grade, whereas White English-monolingual children had significantly increasing rates of change. Again, children's externalizing problems increased significantly more slowly from kindergarten to fifth grade if they had better reading scores over time.

The internalizing and externalizing trajectories from kindergarten to fifth grade based on the results of Table 3 are presented in Figure 1. Non–English-dominant bilingual and fluent bilingual children had the slowest growth rates in behavioral problems of all groups, allowing them to have the lowest levels of behavioral problems by the fifth grade. English-dominant bilingual children had similar levels and growth rates of problem behaviors as White English-monolingual children. Alarmingly, non–English-monolingual children started with similar levels of internalizing and externalizing

TABLE 3—Growth Curve Results of Behavioral and Emotional Well-Being Among Children From Kindergarten to Fifth Grade: Early Childhood Longitudinal Study, Kindergarten Cohort, United States, 1998–2004

	Internalizing Behavior Problems[a]		Externalizing Behavior Problems[b]	
	Fixed Effects, b (95% CI)	Rate of Change, b (95% CI)	Fixed Effects, b (95% CI)	Rate of Change, b (95% CI)
English monolingual (Ref)	0.076* (–0.002, 0.154)	0.049*** (0.031, 0.067)	0.089* (0.013, 0.165)	0.022** (0.006, 0.038)
English-dominant bilingual	0.028 (–0.033, 0.089)	0.010 (–0.032, 0.012)	0.010 (–0.075, 0.055)	0.003 (–0.015, 0.021)
Fluent bilingual	0.033 (–0.115, 0.049)	0.019 (–0.044, 0.006)	0.041 (–0.127, 0.045)	0.014 (–0.036, 0.008)
Non–English-dominant bilingual	0.007 (–0.101, 0.087)	0.017 (–0.054, 0.020)	0.005 (–0.093, 0.103)	0.048** (–0.079, -0.017)
Non-English monolingual	0.008 (–0.115, 0.131)	0.049 (–0.016, 0.114)	0.049 (–0.178, 0.080)	0.041 (–0.012, 0.094)
Reading score	0.009 (–0.029, 0.011)	0.002*** (–0.003, -0.001)	0.001 (–0.019, 0.021)	0.032** (–0.052, -0.012)
	Variance components			
Level 1, within person	0.600*** (0.580, 0.620)		0.377*** (0.355, 0.399)	
Level 2, between person				
In initial status	0.327*** (0.305, 0.349)		0.588*** (0.564, 0.612)	
In rate of change	0.014*** (0.010, 0.018)		0.010*** (0.006, 0.014)	
Level 3, between school				
In initial status	0.088*** (0.078, 0.098)		0.064*** (0.054, 0.074)	
In rate of change	0.006** (0.002, 0.010)		0.004* (0.000, 0.008)	
R^2	0.073		0.112	

Note. CI = confidence interval. Analyses were controlled for child's country of origin (East Asia; Thailand, Vietnam, Cambodia, and Laos; other Southeast Asia; India; or US-born Asian, with US-born non-Hispanic White as the reference group), child characteristics (being male, low birth weight, and attending center-based care before kindergarten), family characteristics (mother married at child's birth, having siblings present, number of family members under age 18 years at home, family's socioeconomic status, and living in a single-parent family), and parental educational practices and home environment (parental educational expectations, parental participation in school events, home learning activities, region and location of residence), and school characteristics, including the type of school (being public), student minority composition, providing instructional English as a second language (ESL) activities, providing Title I services, teachers and principals' ESL experience, providing services to ESL families, whether the school's academic standards were too low, school stability, student learning environment, student academic performance, teacher's effort, school supportive and teaching environments, school work climate, and school physical facility/resources.

[a]The frequency of arguing, fighting, getting angry, acting impulsively, and disturbing ongoing activities; drawn from teacher-reported data.

[b]The apparent presence of anxiety, loneliness, low self-esteem, and sadness; drawn from teacher-reported data.

*P < .05; **P < .01; ***P < .001

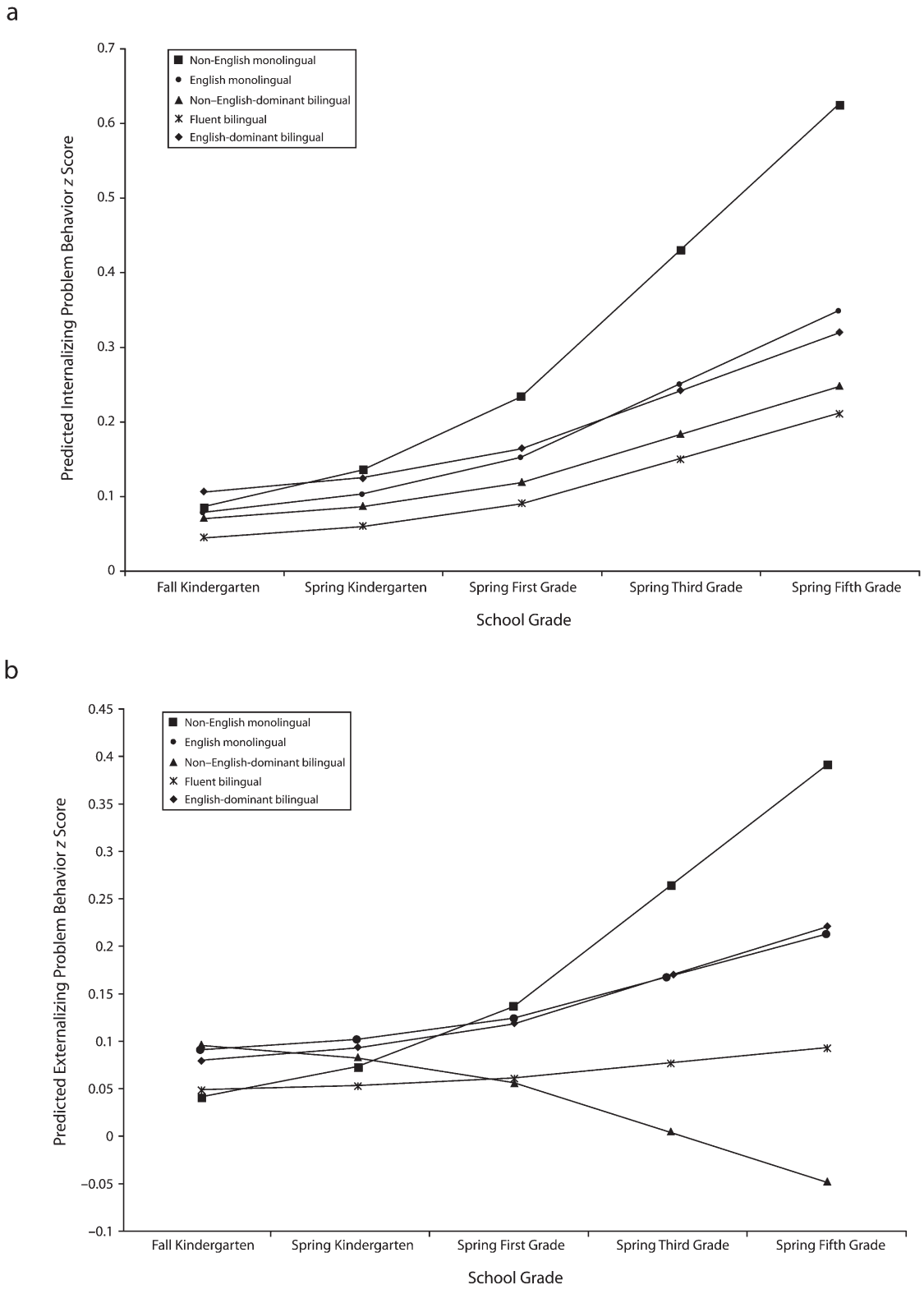
problems at kindergarten entry compared with their counterparts but had the highest levels of both behaviors by fifth grade.

Although the presentation did not focus on child, family, and school characteristics, the estimates and directions of these variables were as expected. Specifically, living in a 2-parent family, having fewer family members under age 18 years, having higher socioeconomic status, and higher parental involvement in learning at home and school were significantly associated with lower levels of internalizing and externalizing behavior problems. Indeed, child and family characteristics explained at least one third of the variation in children's emotional and behavioral well-being. Regarding school characteristics, children in schools with a more supportive teaching environment not only had significantly lower levels of internalizing behavior problems but also had significantly slower growth rates (flatter slopes) of those problems from kindergarten to fifth grade compared with children in other schools. In addition, children who had teachers and principals with more ESL experience had significantly slower behavior problem growth rates. Children in higher performing schools and those in more teacher-supportive schools had significantly lower levels of externalizing behavior problems. Importantly, having greater supportive and teaching environment and teachers and principals with more ESL experience contributed to significantly slower increases in externalizing behavior problems. Nonetheless, the school-level variables explained only a low portion of the variation in children's emotional and behavioral well-being.

DISCUSSION

Most Asian children who spoke a non-English language were doing as well as their White English-monolingual peers, if not better, on their behavioral trajectories. Fluent bilingual children and non–English-dominant bilingual children had the lowest levels of internalizing and externalizing behaviors by fifth grade. English-dominant bilingual children and White English-monolingual children had similar levels of behavioral and emotional well-being. Non–English-monolingual children, however, had the highest levels of both behavior problems by fifth grade.

Although it is clear that the non–English-monolingual children had more disadvantageous school and family characteristics, many of these factors were controlled for, which suggests that the lack of bilingual ability might be responsible for some of the negative outcomes. Indeed, the bilingual groups had the most positive outcomes. This is not surprising given that, in addition to having no problems with English in the school environment, bilingual children receive extra benefits from the cultural resources in their families and ethnic communities.[40–42] The ability to understand 2



Note. English-monolingual children were US born and non-Hispanic White; this was the reference group.

Figure 1—Children's kindergarten to fifth grade *z* scores of predicted (a) internalizing and (b) externalizing problem behavior: Early Childhood Longitudinal Study, Kindergarten Cohort, United States, 1998–2004.

cultures intimately is also likely to help children appreciate diversity and get along with peers and teachers.[14] Previous research has shown that being able to speak the parents' language helps to improve the parent-child relationship and immigrant adolescents' self-esteem and mental health.[14] Our study extends this line of research, establishing a direct link between bilingualism and behavioral and emotional well-being during the early school years.

Notably, non–English-dominant bilingual children had fewer internalizing and externalizing behaviors compared with English-dominant bilingual children. The classifications of these 2 groups may have influenced this finding. Non–English-dominant bilingual children were defined as sometimes, often, or very often speaking the parents' language with their parents and being proficient in English by the start of first grade (although not by kindergarten). This suggests that these children may speak less English than fluent bilingual children, but that their non-English proficiency may be similar. In contrast, English-dominant bilingual children had proficient English at school entry but spoke their parents' language only sometimes, which suggests that they had less fluency in a non-English language than did non–English-dominant bilingual children. If so, the results for the non–English-dominant bilingual children and English-dominant bilingual children only reinforce the hypothesis that speaking 2 languages helps to strengthen the parent–child relationship and children's behavioral and emotional well-being.

Although our results support the long-held finding that family background plays a significant role in shaping children's developmental experiences and trajectories, the school environment is clearly important as well, especially for English-language-learner children, whose feelings and actions are affected by the language feedback that they receive from their teachers and peers.[2,5] Given bilingualism's positive effects on school achievement and the fact that children often lose their native language over time, future research should examine the different impacts that schools and families have on children's ability to stay bilingual.

Several limitations are worth noting here. First, because behavior problems were reported by teachers in each grade, teacher bias could have influenced the trends we found in these outcomes. However, the standard errors of these 2 measures were relatively stable over time for the whole group as well as within various subgroups (e.g., by language, country of origin, and race/ethnicity). Although the results should still be interpreted with caution, this suggests that teacher bias may not have been very strong.

Second, information from only kindergarten and first grade was used to classify language status, which misses the effects of subsequent language development on children's well-being. It is possible that children with slower internalizing and externalizing behavior growth rates may also have better academic achievement and language proficiency over time. Indeed, better reading scores over time were significantly associated with slower increases in both behaviors. Although this study controlled for children's reading scores, future work should distinguish between the effects of academic achievement and those of language proficiency over time on children's behavioral and emotional well-being.

Despite these limitations, we have clearly shown that there is some emotional and behavioral benefit to being bilingual and that parents should be encouraged to speak their native language with their children. Furthermore, schools should be encouraged to nurture bilingualism, not just English. Monolingualism, especially non–English-monolingualism, appears to be a risk factor for poor behavioral and emotional outcomes in the early school years. In the present analyses, children in schools with ESL-experienced staff and supportive teaching environments were rated as having better behavioral and emotional well-being. These results speak volumes to the importance of attracting experienced staff and supporting them to help improve student well-being. The results also show that schools' efforts to improve children's behavioral and emotional well-being, such as mental health prevention efforts,[43] may be supported by bilingual English-language-learner programs and adequate teacher support. ■

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Contributors

W.-J. Han conceptualized the study, conducted and framed the analysis, and led the writing of the article. C.-C. Huang assisted in the writing of the article. Both authors interpreted the findings and reviewed drafts of the article.

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Human Participant Protection

Because this study used only the analysis of deidentified secondary data, no protocol approval was needed.

References

1. Passel J, Cohn D. US population projections: 2005–2050. Washington, DC: Pew Hispanic Center; 2008. Available at: http://pewhispanic.org/files/reports/85.pdf. Accessed March 8, 2009.

2. Raver CC. Emotions matter: making the case for the role of young children's emotional development for early school readiness. *Soc Policy Rep.* 2002;26(3):3–18.

3. Eccles JS. The development of children ages 6–14. *Future Child.* 1999;9(2):30–44.

4. Dodge KA, Pettit GS, Bates JE. Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Dev.* 1994;65(spec 2):649–665.

5. Hamre BK, Pianta RC. Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Dev.* 2001;72(2):625–638.

6. Parker JG, Asher SR. Peer acceptance and later personal adjustment: are low accepted children "at risk"? *Psychol Bull.* 1987;102:357–389.

7. Rose SL, Rose SA, Feldman JF. Stability of behavior problems in very young children. *Dev Psychopathol.* 1989;1:5–19.

8. Wehby JH, Dodge KA, Valente E; the Conduct Disorders Prevention Research Group. School behavior of first grade children at risk for development of conduct problems. *Behav Disord.* 1993;19:67–78.

9. Alexander KL, Entwisle DR. Schools and children at risk. In: Booth A, Dunn JL, eds. *Family School Links: How Do They Affect Educational Outcomes?* Hillsdale, NJ: Erlbaum; 1996:67–88.

10. La Paro KM, Pianta RC. Predicting children's competence in the early school years: a meta-analytic review. *Rev Educ Res.* 2000;70(4):443–484.

11. Saft EW, Pianta RC. Teachers' perceptions of their relationships with students: effects of child age, gender, and ethnicity of teachers and children. *Sch Psychol Q.* 2001;16(2):125–141.

12. Sbarra DA, Pianta RC. Teacher ratings of behavior among African American and Caucasian children during the first two years of school. *Psychol Sch.* 2001;38(3): 229–238.

13. Harris KM, Committee on the Health and Adjustment of Immigrant Children and Families, Board on Children, Youth, and Families. The health status and risk behaviors of adolescents in immigrant families. In: Hernandez DJ, ed. *Children of Immigrants: Health, Adjustment, and Public Assistance.* Washington, DC: National Academy Press; 1999:286–315.

14. Rumbaut RG. The crucible within: ethnic identity, self-esteem and segmented assimilation among children of immigrants. *Int Migr Rev.* 1994;28(7):748–794.

15. Portes A, Hao L. E Pluribus Unum: bilingualism and loss of language in the second generation. *Sociol Educ.* 1998;71(4):269–294.

16. Golash-Boza T. Assessing the advantages of bilingualism for the children of immigrants. *Int Migr Rev.* 2005;39(3):721–753.

17. Portes A, Hao L. The price of uniformity: language, family and personality adjustment in the immigrant second generation. *Ethn Racial Stud.* 2002;25(6):889–912.

18. Portes A, Hao L. The schooling of children of immigrants: contextual effects on the educational attainment of the second generation. *Proc Natl Acad Sci USA.* 2004;101(33):11920–11927.

19. Portes A, McLeod D. Educating the second generation: determinants of academic achievement among children of immigrants in the United States. *J Ethn Migr Stud.* 1999;25(3):373–396.

20. Portes A, Schauffler R. Language and the second generation: bilingualism yesterday and today. *Int Migr Rev.* 1994;28(4):640–661.

21. Portes PR. Social and psychological factors in the academic achievement of children of immigrants: a cultural history puzzle. *Am Educ Res J.* 1999;36(3):489–507.

22. Tseng V, Fuligni AJ. Parent-adolescent language use and relationships among immigrant families with East Asian, Filipino, and Latin American backgrounds. *J Marriage Fam.* 2000;62(2):465–476.

23. Bialystok E. Levels of bilingualism and levels of linguistic awareness. *Dev Psychol.* 1988;24:560–567.

24. Duncan SE, De Avilla EA. Bilingualism and cognition: some recent findings. *NABE J.* 1979;4:15–50.

25. Rumbaut RG. The new Californians: comparative research findings on the educational progress of immigrant children. In: Rumbaut RG, Cornelius WA, eds. *California's Immigrant Children: Theory, Research, and Implications for Educational Policy.* La Jolla, CA: Center for US–Mexican Studies, University of California, San Diego; 1995:17–69.

26. Willig AC. A meta-analysis of selected studies on the effectiveness of bilingual education. *Rev Educ Res.* 1985;55:269–317.

27. Bankston CL III, Zhou M. Effects of minority-language literacy on the academic achievement of Vietnamese youths in New Orleans. *Sociol Educ.* 1995; 68(1):1–17.

28. Portes A, Rumbaut RG. *Legacies: The Story of the Immigrant Second Generations.* Berkeley, CA: University of California Press; 2001.

29. Portes A, Zhou M. The new second generation: segmented assimilation and its variants. *Ann Am Acad.* 1993;530:74–96.

30. Rumberger R, Larson KA. Toward explaining differences in educational achievement among Mexican American language-minority students. *Sociol Educ.* 1998; 7:69–93.

31. Zhou M, Bankston CL III. Social capital and the adaptation of the second generation: the case of Vietnamese youth in New Orleans. *Int Migr Rev.* 1994; 28(4):821–845.

32. Zhou M, Bankston CL III. *Growing up American: How Vietnamese Children Adapt to Life in the United States.* New York, NY: Russell Sage Foundation; 1998.

33. McCulloch A, Wiggins RD, Joshi HE, Sachdev D. Internalizing and externalizing children's behaviour problems in Britain and the US: relationships to family resources. *Child Soc.* 2000;14:368–383.

34. Portes A, Rumbaut RG. *Immigrant America: A Portrait.* Berkeley, CA: University of California Press; 2006.

35. Duncan SE, DeAvila EA. *PreLAS 2000 Examiner's Manual, English Forms C and D.* Monterey, CA: CTB/ McGraw-Hill; 2000.

36. Bennett P, Elliott M, Peters D. Classroom and family effects on children's social and behavioral problems. *Elem Sch J.* 2005;105(5):461–480.

37. Borman GD, Overman LT. Academic resilience in mathematics among poor and minority students. *Elem Sch J.* 2004;104(3):177–195.

38. Griffith J. A multilevel analysis of the relation of school learning and social environments to minority achievement in public elementary schools. *Elem Sch J.* 2002;102(5):349–366.

39. Singer JD, Willett JB. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence.* New York, NY: Oxford University Press; 2003.

40. Fuligni AJ. The academic achievement of adolescents from immigrant families: the roles of family background, attitudes, and behavior. *Child Dev.* 1997;68: 351–363.

41. Fuligni AJ. Parental authority, adolescent autonomy, and parent–adolescent relationships: a study of adolescents from Mexican, Chinese, Filipino, and European backgrounds. *Dev Psychol.* 1998;34:782–792.

42. Fuligni AJ, Flook L. A social identity approach to ethnic differences in family relationships during adolescence. In: Kail R, ed. *Advances in Child Development and Behavior.* New York, NY: Academic Press; 2005:125–152.

43. Hoagwood K, Johnson J. School psychology: a public health framework. I: From evidence-based practices to evidence-based policies. *J Sch Psychol.* 2003;41:3–22.