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**The Early Cognitive Development of Two Divergent U.S. Immigrant Groups: U.S. Born Children in Hispanic and Asian Immigrant Families**

Micere Keels  
Allison Fasoli

University of Chicago

**Abstract:** In this paper, we examine the early cognitive development of Hispanic and Asian children in the U.S., particularly the extent to which acculturation and socioeconomic resources account for between and within panethnic group differences in children's 48-month literacy and math skills. Data from the Early Childhood Longitudinal Study-Birth cohort are utilized. We found that though Hispanic and Asian descent families living in the U.S. are diverse panethnic groups, the risk and protective factors associated with these two panethnic groups disproportionately place Hispanic children at-risk for lower levels of cognitive development. Asian-Hispanic differences in parenting (supportive parenting and reading frequency) were fully accounted for by differences in socioeconomic resources (maternal education and household poverty). However, though socioeconomic resources accounted for a significant portion of the Asian-Hispanic gap in children's cognitive skills, significant and substantive gaps remained. Intra-panethnic group analyses revealed that socioeconomic resources were more important than acculturation (mother's nativity and the language environment at home) in accounting for differences in children's early cognitive skills. Among Asian families, there remained differences associated with mothers' country of origin that were not fully explained by socioeconomic resources and acculturation.

## **The Early Cognitive Development of Two Divergent U.S. Immigrant Groups: U.S. Born Children in Hispanic and Asian Immigrant Families**

In this paper, we delve deeper into the dramatic differences in the early cognitive development of Hispanic and Asian children residing in the U.S.. Fryer and Levitt (2004) show that of the four dominant U.S. panethnic groups (Hispanic, Asian, African, and European), at kindergarten entry Asian children have the highest, and Hispanic children have the lowest, levels of cognitive skills. They found that relative to Hispanic children, Asian children scored 0.92 of a standard deviation higher in kindergarten entry reading skills and 0.70 of a standard deviation higher in math skills. Furthermore, an examination of children's 48-month cognitive skills revealed that Hispanic children received the smallest returns in cognitive skills to increasing SES, whereas Asian children received the largest returns (Keels & Fasoli, 2010). Therefore, Asian-Hispanic gaps in early cognitive scores increase with increasing SES. In this paper, we look between and within these two historically recent U.S. immigrant groups to better understand the factors accounting for children's divergent outcomes.

Focusing on these two immigrant groups brings to the fore theories of segmented assimilation and acculturation. Theories of segmented assimilation focus on explaining the processes by which different immigrant groups assimilate into different locations on the U.S. stratification system (Portes & Zhou, 1993; Zhou & Xiong, 2005; Zhou, 1997; Lopez & Stanton-Salazar, 2001; Ortiz, 1996). The overwhelming majority of immigrants come to the U.S. with the plan of working hard to achieve a better life for themselves and their children. This is evidenced by the fact that 95%-96% of young children in immigrant families have a father working to support the family, and 62% have a mother who is employed (Hernandez, Takanishi, & Marotz, 2009). However, panethnic group differences in the likelihood of immigrant families' U.S.-born children's assimilation into the middle-class are affected by several exit and entry factors. The

long-term class position of immigrant groups is determined by exit characteristics (pre-migration economic and human capital resources, social class status of the immigrants in their homelands), and reception at entry (entering location on the U.S. ethnic stratification system, government supports that can be accessed, labor market conditions, public attitudes, and the strength and viability of U.S. co-ethnic enclaves) (Portes & Rumbaut, 1996; Zhou & Xiong, 2005). Each immigrant group's socioeconomic success in the U.S. affects the resources that its members have to put to the task of parenting, and thereby the cognitive development of their children.

In addition to between-immigrant-group socioeconomic factors, within-immigrant-group differences in parents' level of acculturation are also associated with children's early cognitive development. Acculturation is the process of adopting and participating in the cultural traditions, values, beliefs, assumptions, and practices of the dominant cultural orientation (Goldenberg & Gallimore, 1995; Reese & Gallimore, 2000). Depending on exposure to the receiving culture, research suggests that cultural models can change as quickly as one generation after immigration (Bornstein & Cote, 2006; Delgado-Gaitan, 1994; Okagaki & Sternberg, 1993; Phinney, 2006). Immigrants bring their original cultural beliefs to bear on their interpretations of new cultural messages and experiences; thus, recent immigrants share in the beliefs of their host country and origin country, but are equitable with neither. The importance of acculturation (becoming more American) in predicting children's cognitive development is not well understood because each culture has evolved optimal parenting styles and practices that support its children's development (Keller, et al., 2006). For acculturation to have a positive effect on children's cognitive development, the parenting styles and practices of immigrants' origin cultures would have to be less supportive of the aspects of cognitive development that are valued in the U.S. than the parenting styles and practices of mainstream U.S. culture. To put this another way, immigrants'

parenting styles and practices would have to be less adaptive in the U.S. cultural context than in their countries of origin for acculturation to positively affect children's cognitive development.

In this paper, we first describe the patterns of children's early cognitive development based on mother's panethnic group membership and country of origin. Next we show the extent to which maternal socioeconomic resources and level of acculturation account for between and within immigrant group differences in both parenting behaviors and children's early cognitive development. Our focus is in teasing apart whether socioeconomic resources account for the majority of between and within group differences in both parenting behaviors and children's cognitive development, or whether, after accounting for socioeconomic resources, the measured parenting behaviors are significant predictors of children's early cognitive development.

#### Hispanic Descent Families

Hispanic immigrants in the U.S. come from cultures where, during children's preschool years, socioemotional and relational skills are prioritized (Harwood, Leyendecker, Carlson, & Ascencio, 2002). Furthermore, research with Hispanic families residing in the U.S. finds little support among Latina mothers for the belief for the role of parents as children's first "teachers" in the development of early literacy and numeracy skills (Goldenberg, Reese, & Gallimore, 1992; Gallimore & Goldenberg, 1993). However, there is evidence supporting the idea that as Hispanic families acculturate they are more likely to adopt mainstream U.S. parenting beliefs and practices (Hill, Bush, & Roosa, 2003; Ispa, et al., 2004; Parke, et al., 2004). For example, Hispanic-American mothers who are foreign-born have a stricter style of parenting than their U.S.-born counterparts (Buriel, 1993; Chun & Akutsu, 2003), while mothers with more English proficiency have more positive and responsive interactions with their infants (Cabrera, Shannon, West & Brooks-Gunn, 2006).

The demographic characteristics of Hispanic families in the U.S. place their children at substantial risk for low levels of early cognitive development. Relative to European-American children, children in Hispanic immigrant families are more likely to reside in households with low incomes, low education levels, and limited English proficiency (Dumka, Gonzales, Bonds, & Millsap, 2009; Leyendecker & Lamb, 1999; U.S. Census 2002). All of these factors are associated with a home environment that is less likely to develop children's cognitive skills (Brooks-Gunn & Markman, 2005; Garcia, Jensen, Miller, & Huerta, 2005). That said, Hispanic immigrant families are not without strengths such as a high likelihood of residing in a two-parent household with a mother at home, and close proximity to an extended family network that can provide child care and other household supports (Shields & Behrman, 2004).

Hispanic families in the U.S. are often further disadvantaged by their residence in disadvantaged U.S. neighborhoods that have limited opportunities for socioeconomic mobility and that offer exposure to nonmainstream beliefs and behaviors that are oppositional to mainstream culture (Portes & Zhou, 1993; Zhou 1997; Portes & Rumbaut, 2001). Because of this, demographically-based measures of acculturation such as higher generational status and parental U.S. nativity do not necessarily correlate with increasing adoption of mainstream models. Evidence supporting a negative association between acculturation and children's developmental outcomes for Hispanic-Americans can be found in maternal pre- and post-natal health practices. For example, less acculturated Latina mothers are less likely to smoke during pregnancy and more likely to breastfeed, and more likely to have healthy birthweight and full-term babies (Coonrod, Bay & Balcazar, 2004; Fuller et al. 2009; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005).

However, these negative acculturation patterns may be limited to practices and outcomes surrounding health. We speculate that the health practices of low-income low-educated Hispanic families residing in Latin American countries may be healthier than those of low-income low-educated Hispanic families residing in the US. Therefore, as Hispanic families emigrating to the U.S. acculturate their children become less healthy. We believe that, in contrast, the parenting practices of low-income low-educated Hispanic families residing in Latin American countries may be less geared toward developing academic skills than those of low-income low-educated Hispanic families residing in the U.S.. Consequently, as Hispanic families residing in the U.S. acculturate, their children would have higher early cognitive skills. De Feyter & Winsler (2009) found that among low-income children in Miami-Dade county, children in non-immigrant families demonstrated stronger pre-academic (cognitive and language) skills than children in immigrant families.

Additional support for the prediction that Hispanic children in native families will have higher cognitive skills than those in immigrant families comes from cross-cultural studies of Hispanic families (Gillanders & Jimenez, 2004; Reese & Gallimore, 2000). These researches examined the literacy beliefs and practices of foreign-born Hispanic parents' communities of origin, and found that parents play a minimal role in children's reading and writing based on the belief that pre-school aged children are too young to understand and that learning to read requires formal instruction and the repeated practice of identifying letters, words, and sounds. As these immigrant parents were exposed to mainstream U.S. parenting models, they began to adopt these mainstream beliefs and practices surrounding literacy and implemented them with their young children (Goldenberg, Gallimore, & Reese, 2005).

Asian Descent Families

Currently, the majority of Asian immigrants in the US come from countries where success in an intensely competitive education system was the single most important means of obtaining social mobility, and where families assume the burden of preparing their children for competing in that system (Chao, 2001; Hwa-Froelich & Westby, 2003). Therefore, parents' roles in the teaching and training of children's academic skills are emphasized. This structural system is supported by Confucian cultural beliefs that reinforce parents' responsibilities in children's education (Chao & Tseng, 2002; Huntsinger, Jose, Liaw, & Ching, 1997; Wu, 1996). Parents fulfill these tasks through parenting styles that have been described as both warm and controlling (Chao & Tseng, 2002; Chen, Liu, & Li, 2000; Jose, Huntsinger, Huntsinger, & Liaw, 2000).

There is some evidence that Asian parents retain these parenting practices and parenting styles as they acculturate. Though some studies have found that parental control and monitoring declines among Chinese and Korean immigrants (Lin & Fu, 1990; Storm, Park, & Daniels, 1987), most studies find that parental control remains comparably high relative to Euro-American families, and that first and second generation families are more similar than different (Chao, 2001; Jose, et al., 2000; Lin & Fu, 1990). Asian immigrant parents also continue to show high levels of direct and indirect involvement in their young children's academic preparation (Huntsinger & Jose, 2009; Sy & Schulenberg, 2005). In a recent study, Chao and Kanatsu (2008) found that within-group variations in parental monitoring, warmth, and behavioral control among Asian American families were not associated with mothers' generational status, age of arrival in the US, or native fluency.

Asian immigrant families are more likely to have demographic characteristics that may be advantageous for their children's levels of kindergarten readiness. Relative to European-American children, children in Asian immigrant families are less likely to reside in households

with low incomes and low education levels, and also have the highest rates of two-parent households (Sakamoto & Xie, 2006; Xie & Goyette, 2004; Zhou & Xiong, 2005). Therefore, Asian-American families are demographically better positioned than Hispanic-American families to provide a cognitively stimulating environment at home. Children in Asian immigrant families are also exposed to substantial risks such as linguistic and cultural isolation in their homes and neighborhoods (Shields & Behrman, 2004).

Asian children in the U.S. (primarily Chinese, Korean, and Vietnamese) are also supported by an ethnic system of weekend and afterschool supplementary education (Zhou, 2007; Zhou & Kim, 2007; Chen & Stevensen, 1995). Zhou argues that the academic achievement of a substantial percent of Asian-American children is supported by growing up in an immediate social environment that supports and enables the realization of parents' expectations of high academic achievement. She states that the primary goal of contemporary Chinese language schools is to push children's success in American public schools through a comprehensive academic curriculum.

#### Socioeconomic Resources and Parenting

Socioeconomic resources, which, as discussed above, are differentially distributed across Hispanic and Asian immigrant families, are significant predictors of both parenting and children's cognitive development (Brooks-Gunn, Berlin, & Sidle, 2000; McLoyd, 1990). Two family background characteristics that have robust relationships with the quality of children's developmental environments are maternal education and household poverty (McLanahan, 2004; Duncan & Brooks-Gunn, 1997). Across and within societies, increased maternal education is strongly associated with improvements in children's developmental outcomes (Joshi, 1994; LeVine, LeVine, & Schnell, 2001; Richman, Miller, & LeVine, 1992). Some argue that

education provides parents with particular parenting skills, knowledge, and beliefs such as the benefits of didactic interactions (Eccles, 2005). Others focus on the effects that education has on parenting styles, perceptions of child temperament, positive parenting attitudes, and adaptive parenting strategies (LeVine, LeVine, & Schnell, 2001; Mylod, Whitman, & Borkowski, 1997; O'Callaghan, Borkowski, Whitman, Maxwell, & Keogh, 1999).

Household poverty has also been reliably linked to the quality of parent-child interactions and children's developmental outcomes (Brooks-Gunn, Duncan, & Britto, 1999; Dearing & Taylor, 2007; Stipek & Ryan, 1997; Walker, Greenwood, Hart, & Carta, 1994). One commonly implicated pathway is that limited economic resources increases children's exposure to stress, such as neighborhood crime, marital conflict, and maternal depression, which compromises the quality of children's home environments and parent-child interactions (Hill & Herman-Stahl, 2002; Huston, McLoyd, & Coll, 1997; Raviv, Kessenich, & Morrison, 2004). A second often researched pathway is that limited economic resources negatively affects parents' abilities to invest in children through the purchasing of books, cognitively stimulating toys, and extracurricular activities (Carneiro, Meghir, & Parey, 2007; Gershoff, et al., 2007; Yeung, Linver, & Brooks-Gunn, 2002). In the analyses presented in this paper, maternal education and household poverty are considered together, because of the difficulty disentangling their joint direct and indirect effects on parenting and children's developmental outcomes.

A substantial amount of research has focused on the effects of a supportive parenting style and literacy stimulation in children's early cognitive development (Bornstein, 2002). Supportive parenting is defined as parenting that is non-restrictive and non-punitive, actively demonstrates positive regard for the child, is responsive to child's cues, and includes stimulating teaching behaviors (National Institute of Child Health and Human Development, 1992).

Supportive parenting and its positive association with children's development is based on a white middle-class cultural orientation, evident both in the samples on which this construct was developed and in the definition that narrowly assumes supportiveness is geared toward promoting early autonomy. There is limited research evidence of the extent to which this definition of supportiveness fully taps the important dimensions of immigrant mothers' supportive parenting (Chao & Tseng, 2002; Harwood, Leyendecker, Carlson, & Ascencio, 2002).

Researchers have found that there is significant variation between cultural groups regarding the complexity, frequency, and directive nature of parent-child communication, as well as book reading routines and parent-directed literacy instruction (Brice Heath, 1983; Britto, Brooks-Gunn, & Griffin, 2006; Carrington & Luke, 2003; Reese & Gallimore, 2000; Snow, Burns, & Griffin, 1998). Hispanic-American families' early literacy practices favor telling stories and singing songs over shared book reading (Raikes, et al., 2006), and narratives are used as moral messages or social tasks to facilitate children's social development, rather than as academic opportunities to promote children's literacy skills (Perry, Kay, & Brown, 2007). The practices of Asian-American families encourage children to engage directly with print for academic purposes, by providing instruction in reading and writing, by frequently reading to their children, and by providing indirect involvement through monitoring and structuring their children's literacy environments inside and outside of the home (e.g., reading materials, limited television hours, library visits, enrollment in special classes) (Chao, 2000; Huntsinger & Jose, 2009; Sy & Schulenberg, 2005). These panethnic differences in the extent to which parenting practices surrounding literacy engage children with text and include direct instruction

differentially develop children's early academic literacy skills. These are broad group level generalizations and must be interpreted with caution.

Several recent studies have demonstrated that parenting mediates a substantial portion or all of the relationship between socioeconomic resources and children's early cognitive development. Raviv, Kessenich, and Morrison (2004) found that maternal sensitivity and cognitive stimulation were significant partial mediators of the relationship between socioeconomic resources and three-year-old children's receptive and expressive language skills. Lugo-Gil and Tamis-LeMonda (2008), using a nationally representative sample of demographically disadvantaged families, found that the effects of family economic resources on children's early cognitive outcomes were completely mediated by literacy stimulation and maternal supportiveness. Finally, Mistry, et al. (2008) found that these same parenting measures mediated the relation between socioeconomic resources and children's cognitive development in native- and foreign-born families. Considering the dramatic differences in Hispanic and Asian families' socioeconomic resources, there is a strong potential that any observed panethnic group differences in parenting and children's early cognitive development are both accounted for by group level differences in socioeconomic resources.

#### The Current Study

First, addressing issues of segmented assimilation, to what extent do children from these two panethnic groups have different early cognitive skills and therefore will potentially have different levels of school success. Furthermore, to what extent are there differences based on specific Hispanic and Asian origin countries. All of the exit characteristics and reception at entry factors described above favor Asian families, on the aggregate level. Second, given the importance of socioeconomic resources in determining parenting practices, we examine the

extent to which any observed panethnic group differences in parenting are accounted for by socioeconomic resources. Third, regarding children's early cognitive development, we examine the importance of socioeconomic resources in accounting for panethnic group differences, and whether after accounting for socioeconomic resources, the parenting measures are of any predictive importance. We hypothesize that socioeconomic resources will fully account for the group level differences in both parenting practices and children's cognitive development, and that after accounting for socioeconomic resources the parenting measures will not be of any predictive utility.

Fourth, addressing issues of acculturation within each panethnic group, we examine whether there is any evidence for the Hispanic immigrant-paradox that has been found for health outcomes, where foreign-born mothers have children with better health outcomes than children of native-born mothers. Additionally, within each panethnic group we investigate the extent to which maternal education and household poverty account for any observed associations between acculturation and children's cognitive development. We hypothesize that for Hispanic families, children of native-born mothers will have higher early cognitive skills than children of foreign-born mothers; we predict that the opposite will occur for Asian families, and that children of foreign-born mothers will have higher early cognitive skills than children of native-born mothers.

## Methods

### Sample

Data for these analyses come from participants of the ECLS-B, which is an ongoing study of a nationally representative sample of approximately 14,000 newborns, which resulted in 10,700 completed 9-month parent interviews (Bethel, Green, Nord, Kalton, West, 2005). Parent

interviews and assessments were conducted in English or Spanish, based on parent's English speaking ability; translators were provided for families who spoke other languages. Each wave included parent responses to questionnaires, direct child assessments, and videotaped parent-child semi-structured interactions. For this paper 9-, 24-, and 48-month ECLS-B data were used. There were no significant differences in the characteristics of the samples that completed each wave of assessment (Snow, et al., 2007).

The sample used in this paper is limited to the subset of children of Hispanic and Asian mothers who were singleton births, and whose mothers were over age 16 at the time of their births. Of this sample of approximately 2,850 children, approximately 2,750 completed the 9-month, 2,300 completed the 24-month, and 2,000 completed the 48-month cognitive assessments.<sup>1</sup> Of the Hispanic families who completed the 9-month cognitive assessments, 87% completed the 24-month, and 70% completed the 48-month cognitive assessments. Of the Asian families who completed the 9-month cognitive assessments, 82% completed the 24-month, and 78% completed the 48-month cognitive assessments.

#### Dependent Variables

Children's cognitive development was assessed at the 9- and 24-month assessments with modified versions of the The Bayley Scales of Infant Development, Second Edition (BSID-II). This Bayley Short Form - Research Edition (BSF-R) was individually administered and a score that approximates the Bayley Mental Development Index (MDI) was estimated (Andreassen, Fletcher, & West, 2005). The full BSID-II MDI has 178 mental items; however, the 9-month BSF-R included 29 items, and the 48-month BSF-R included 33 items. Item response theory modeling was used to select the items included in the BSF-R. The items included on the BSF-R

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<sup>1</sup> All unweighted sample sizes have been rounded to the nearest 50, as required by the National Center for Educational Statistics to protect subject confidentiality.

represent all of the constructs covered by the BSID-II, are easy to administer, require few materials, and are straightforward to score. Infants were presented with tasks designed to evoke behavioral responses that were scored to indicate children's level of functioning. Various higher-order cognitive processes were assessed, such as problem solving abilities, object permanence, perspective-taking, memory, and the ability to follow multiple-step directions (Andreassen, Fletcher, & West, 2005). At 9 months, children's ability to engage in purposeful exploration and babbling was assessed, whereas at 24 months, children's ability to use expressive vocabulary and count was assessed.

At the 48-month assessment, children's cognitive development was assessed in the domains of literacy and mathematics using a battery of standardized instruments (Snow, et al., 2007). Literacy skills included familiarity with print convention, letter recognition, phonological awareness, and word recognition, which were assessed using the Preschool Comprehensive Test of Phonological and Print Processing. Mathematic skills included number sense, counting, operations, geometry, pattern understanding, and measurement, and were assessed using the Test of Early Mathematics Ability-3.

The scaled scores for each cognitive assessment (9-month Bayley, 24-month Bayley, 48-month literacy, and 48-month math score) were standardized so that all scores would be on the same scale with a mean of zero and standard deviation of one.

## Independent Variables

### *Acculturation*

Two acculturation variables were created: mother's nativity and children's language environment. Mothers who emigrated to the U.S. before age 4 are coded as native-born (see Glick, Bates, & Yabiku, 2009). Children's language environment was based on whether mothers'

were English proficient (interview completed in English) and whether English was the primary language spoken at home. Children's language environment was dummy coded into three categories: (1) English dominant, (2) bilingual, and (3) non-English dominant. A categorical measure of acculturation was created by combining mothers' nativity, whether the interview was done in English, and whether English is the primary language spoken at home.

These acculturation variables represent several factors that have been associated with intra-ethnic acculturation differences, specifically generational level, English proficiency, and English preference (Arcia, Skinner, Bailey, & Correa, 2001; Ortega, Rosenheck, Alegria, & Desai, 2000; Schwartz, Pantin, Sullivan, Prado, & Szapocznik, 2006). If acculturation entails the increasing adoption of mainstream cultural models due to exposure to these models, then generational status and parental nativity should be valid proxies of acculturation (Halgunseth, Ispa, & Rudy, 2006). English proficiency and preference should also be valid proxies of acculturation since English language use can affect exposure to mainstream models by influencing the quality and quantity of contact with English-speaking Americans and English language media. Moreover, since language is an important aspect of social identity, English-language preference may signal the endorsement of mainstream values (Florsheim, 1997).

We further disaggregated these two panethnic groups based on mothers' detailed self-reported ancestral descent. During the 9-month interview, mothers' were asked to indicate whether they belonged to one or more of 14 race categories. These categories are as follows: White, Black or African American, American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, and Other Pacific Islander. Mothers' who indicated that they were White were also asked if they were of Spanish, Hispanic or Latino origin; and if they were of Mexican,

Puerto Rican, or other Central/South American descent. The following origin countries had enough cases to be used in country of origin analyses: Chinese (n=500), Indian (n=100), Filipino (n=150), Korean (n=100), Vietnamese (n=100), Mexican (n=950), Puerto Rican (n=100), and Central/South American (n=200).

### *Socioeconomic resources*

In the ECLS-B, poverty level was calculated using household income and household size obtained during the parent interview. Families were classified into one of four poverty categories: (1) at or below 100% poverty, (2) between 101% to 130% poverty, (3) between 131% and 184% poverty, and (4) greater than 184% poverty. Because of prior research on the dynamic nature of poverty spells and the importance of measuring depth and persistence of poverty, for each wave we created a cumulative average poverty variable, which included the poverty level of the current and prior waves (Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Duncan & Rodgers, 1988; Smith, Brooks-Gunn & Klebanov, 1997).

Mother's highest level of education at the 9-month assessment was used in these analyses. Mothers were grouped into five categories: (1) less than a high school diploma, (2) high school diploma, (3) some college or an associate's degree, (4) bachelor's degree, and (5) post-graduate degree. Dummy variables based on these categories were used.

### *Parenting practices*

Mother's level of supportiveness was coded from videotaped parent-child interactions in the Nursing Child Assessment Teaching Scale (NCATS) from the Nursing Child Assessment Satellite Training (NCAST) at the 9-month assessment and in the "Two Bags Task" at the 24-month assessment. In NCATS (Barnard, 1978), the parent is asked to select an activity from the list provided that is slightly beyond the child's current abilities (e.g. building a stack of blocks,

turning pages in a book) and then to teach the child that task. The focus on the NCATS is the interaction between the parent and the child rather than the child's success or failure at learning the task (Sumner & Spietz, 1994). The parent's behaviors are coded for the presence or absence of fifty behaviors across four dimensions: sensitivity to the child's cues, responsiveness to the child's distress, fostering the child's social-emotional growth, and fostering the child's cognitive growth (internal reliability ranges from .52 to .80). The sum of these items represents an overall measure of parenting, with higher scores indicating more supportive parenting. This 9-month supportiveness measure ranges from 23 to 70.

The Two Bags Task is a modified version of the Three Bags Task used in the Early Head Start Research and Evaluation Project (Berlin, Brady-Smith & Brooks-Gunn, 2002). This 10-minute semi-structured activity involved presenting the parent and child with two numbered pillowcases, one containing a picture book and the other containing a set of toy dishes. Parents are given deliberately vague instructions to elicit naturally occurring individual differences in parent-child interactions. Observed parent involvement and responses to the child are coded on seven-point coding scales for sensitivity (the extent to which the parent takes the child's perspective, accurately perceives the child's signals, and promptly and appropriately responds to these signals); positive regard (demonstration of love, respect, and admiration); and stimulation of cognitive development (teaching, actively trying to expand the child's abilities). The composite 24- and 48-month supportiveness measures range from 1 to 7.

Literacy stimulation was measured by mother's self-report of how often the focal child was read to. Mothers' responded to the following question: "In a typical week, how often do you or any other family member read books with your child." Responses ranged from "not at all" (coded as 1), "once or twice," "3 to 6 times," to "every day" (coded as 4). Mothers were also

asked about the frequency of singing songs and telling stories to children. However, reading frequency was the only literacy stimulation variable used in these analyses because it was the only significant predictor when all three were entered together in regression analyses.

#### *Control measures*

Demographic and control measures include child's gender, whether child was firstborn, child's low birthweight status, child's age in months at each assessment (assessments were conducted during a year-long period), whether the family resided in an urban or rural city, and whether the family resided a Northern, Western, Southern, or Midwestern state.

#### Data Analysis

Because a complicated stratified random sampling procedure was used, the ECLS-B data includes sampling weights that are used to ensure that analyses can be nationally representative. All reported descriptive and multivariate statistics reported are based on analyses that properly adjust for the stratification and clustering of sampling using Stata's "svy" commands. The extent to which the addition of a series of covariates affected the size and significance of the relationship between panethnicity and mothers' parenting style and practice, and children's cognitive development was examined with a series of hierarchical multiple regression analyses. Regression analyses examined first, the differences associated with panethnic group membership; second, the extent to which the acculturation variables accounted for any observed panethnic group differences; and third, the extent to which socioeconomic resources accounted for any remaining panethnic group differences. Separate within panethnic group analyses were conducted to examine the importance of acculturation and socioeconomic resources in accounting for parenting style and practice, and children's cognitive skills.

#### Results

## Descriptive Statistics

*Socioeconomic and household resources.* Table 1 reports the sample characteristics. The dramatic differences in the resources that Hispanic versus Asian families had to put to the task of parenting was evident in the finding that 51.5% of Asian mothers had a bachelor's degree or higher, compared to 9.4% for Hispanic mothers. Furthermore, 67.2% of Asian families were 185% or more above the poverty line, whereas only 29.7% of Hispanic families were 185% or more above the poverty line. Of foreign-born Asian mothers, 92.2% were English proficient and 24.8% of them primarily spoke English at home (not in tables). Of foreign-born Hispanic mothers, only 53.8% were English proficient and only 8.0% of them primarily spoke English at home (not in tables).

*Parenting practices.* At all assessments, Asian mothers were rated as more supportive and reported more frequent shared book reading than Hispanic mothers. Only the 48-month supportiveness ratings and reading frequency are reported in Table 1.

*Literacy and math skills.* There were no significant differences in the 9-month cognitive scores of Hispanic and Asian children (Table 1 and Figure 1). The standardized 9-month score was 0.17 for Hispanic children and 0.14 for Asian children. However, by the 24-month assessment, significant panethnic group differences were evident. The standardized 24-month score was -0.20 for Hispanic children and 0.10 for Asian children. The difference between these two panethnic groups further increased by the 48-month assessment. The standardized 48-month literacy score was -0.35 for Hispanic children and 0.59 for Asian children, and math scores were -0.29 and 0.51, respectively. For reference, the standardized scores for European-American children in the larger dataset was 0.21 for the 9-month assessment, 0.39 for the 24-month

assessment, 0.07 for the 48-month literacy assessment, and 0.16 for the 48-month math assessment.

We further disaggregated these two panethnic groups based on mothers' ancestral country of origin for both foreign- and native- born mothers (Figure 2). These descriptive analyses revealed that stratification based on mother's country of origin was only significant for Asian children, and this stratification increased as children aged. Asian children whose mothers had origins in China were similar to all other Asian children at the 9-month assessment, were only similar to children whose mothers had origins in Korea at the 24-month assessment, and were significantly different from all other Asian children by the 48-month assessment. Asian children whose mothers had origins in India, Philippines, Korea, or Vietnam had statistically similar cognitive scores at the 9-, 24-, and 48-month assessments. The exception to this was children whose mothers had origins in India, these children had significantly higher 48-month literacy scores.

Hispanic children whose mothers had origins in Mexico, Puerto Rico, or Central/South America had statistically similar cognitive scores at the 9-, 24-, and 48-month assessments.

#### Accounting for Inter-Panethnic Group Differences

We first examined the extent to which Hispanic and Asian mothers' differences in supportiveness ratings and reading frequency were accounted for by the acculturation variables (Table 2, Step 2). Nativity was not predictive of a supportive parenting style, or reading frequency. Relative to mothers providing an English dominant language environment, mothers providing a bilingual or non-English dominant language environment had significantly lower supportiveness ratings, and reported less frequent shared book reading. Adding the acculturation variables reduced the panethnic differences in supportiveness by 36%, but significant Hispanic-

Asian differences remained. Adding the acculturation variables to the model predicting reading frequency had little effect on the Hispanic-Asian differences; the gap was reduced by 15%. Adding maternal education and poverty fully accounted for the remaining Hispanic-Asian differences in supportiveness and reading frequency (Table 2, Step 3). More educated mothers and mothers in households with lower levels of poverty were rated as more supportive and reported more frequent shared book reading.

Next, we examined Hispanic and Asian children's differences in 48 moth literacy and math skills. In models including the acculturation variables, nativity was not significantly associated with children's literacy and math scores (Table 2, Step 2). Children growing up in English dominant homes had significantly higher literacy and math scores, compared to children growing up in bilingual or non-English dominant homes. However, the addition of these acculturation variables had no effect on the Hispanic-Asian differences in children's literacy and math scores. Before adding maternal education and household poverty, Hispanic children were 0.93 of a standard deviation behind Asian children in literacy and 0.75 of a standard deviation behind Asian children in math. After adding maternal education and household poverty, Hispanic children were 0.60 of a standard deviation behind in literacy, and 0.43 of a standard deviation behind in math (Table 2, Step 3). Finally, we tested whether these remaining panethnic group differences were affected by adding supportiveness and reading frequency. Though these parenting variables were significant predictors of children's cognitive skills, the Asian-Hispanic differences in literacy and math scores were unaffected by the addition of these parenting variables (not shown in tables).

Accounting for Intra-Panethnic Individual Differences

*Hispanic families.* In models including all covariates (Table 3, Step 2), Hispanic mothers' foreign birth status was not significantly associated with parenting practices or children's cognitive skills. Relative to mothers raising children in an English dominant environment, mothers raising children in a bilingual environment had lower supportiveness ratings and reading frequency, and their children had significantly lower literacy (0.21 standard deviation lower) and math scores (0.16 standard deviation lower). Mothers raising children in a non-English dominant environment also had lower supportiveness ratings, and reading frequency, but their children did not have lower literacy or math scores. Maternal education and household poverty were significantly associated with parenting and children's cognitive skills.

For Hispanic families, the acculturation variables had a stronger association with parenting practices than with children's cognitive development. Before adding socioeconomic resources, children in bilingual and non-English dominant homes had lower cognitive skills relative to children in English dominant homes. Adding socioeconomic resources eliminated the gap for children in non-English dominant homes. Therefore, children in non-English dominant homes had lower cognitive skills primarily because they also lived in families with fewer socioeconomic resources. Surprisingly, adding socioeconomic resources significantly reduced, but did not eliminate, the gap for children in bilingual homes.

*Asian families.* In models including all covariates (Table 4, Step 2), Asian mothers' foreign birth status was not significantly associated with parenting practices or children's cognitive skills. Relative to mothers raising children in an English dominant environment, mothers raising children in a non-English dominant environment did not differ in their parenting practices or children's cognitive skills. Mothers raising children in a bilingual environment had lower supportiveness ratings, and reading frequency, but their children's cognitive scores did not

differ from children being raised in an English dominant environment. Maternal education and household poverty were significantly associated with parenting and children's cognitive skills.

As with Hispanic families, maternal education and household poverty were more important than the acculturation variables in predicting children's cognitive skills. Therefore, children in non-English dominant homes had lower cognitive skills primarily because they also lived in families with fewer socioeconomic resources.

Because Asian children's 48 month literacy and math scores differed significantly based on mothers' ancestral country of origin, we examined the extent to which the acculturation and socioeconomic variables accounted for these within panethnic group differences (bottom segment of Table 4). In models including all covariates, relative to children of Chinese descent, children of Korean, Philippine, and Vietnamese descent were one third or more of a standard deviation lower on literacy and math skills. Children of Indian descent were approximately one-half of a standard deviation lower on math skills and not significantly different on literacy skills, relative to children of Chinese descent. These within panethnic group differences based on ancestral country of origin were not associated with differences in mothers' acculturation. For literacy skills, mothers' education and household poverty did account for a modest amount of the Chinese versus other differences. In comparison, for math skills, socioeconomic resources did not account for much of the observed group differences; except for the Chinese-Vietnamese comparisons.

## Discussion

We found that the children of the U.S.'s two recent panethnic immigrant groups (Hispanic and Asian immigrants) have dramatically different early cognitive development trajectories, which support theories of segmented assimilation. The historical recency of these

two panethnic groups is evident in the fact that 58% of the Hispanic children had a foreign-born mother and 82% of the Asian children had a foreign-born mother. Hispanic and Asian immigrant families in the U.S. are two dramatically divergent panethnic groups who enter the U.S. with substantially different levels of socioeconomic resources, which is reflected in the differences in children's cognitive skills, and these differences emerge early in children's lives.

Based on the 9-month cognitive assessment there were no significant between or within panethnic group differences in children's cognitive scores. However, by the 24-month assessment, there was a clear divergence in Hispanic and Asian children's cognitive skills, with Asian children scoring about a third of a standard deviation higher. This gap increased again between the 24- and the 48-month assessments. By the 48-month assessment, Asian children scored almost a full standard deviation higher in literacy, and three-fourth of a standard deviation higher in math.

We believe that in understanding these divergent outcomes, one of the primary factors is that the majority of Hispanic immigrants enter the U.S. as low-educated, low-skilled laborers who were well below the middle-class in their origin countries. In contrast, the majority of Asian immigrants enter the U.S. with high levels of education and occupational skills, who were at or above the middle-class in their origin countries (Durand, Massey, & Zenteno, 2001; Feliciano, 2005; Ibarra & Lubotsky, 2007). Approximately 52% of Asian mothers had a bachelor's degree or higher, in comparison to only 9% of Hispanic mothers. The aggregate findings for Asian descent children perpetuates the "model minority" myth, so it is important to note that Asian-American children's developmental outcomes vary dramatically based on country of origin (e.g. China versus Cambodia), and process of immigration (e.g. refugees fleeing war versus voluntary immigrants) (Zhou & Sao Xiong, 2005). However, the most commonly noted

disadvantaged groups (i.e., Cambodians, Hmong, and Laotians) represent only about 4% of Asian Americans (Sakamoto, Goyette, & Kim, 2009).

Hispanic and Asian families were significantly different in their parenting style (supportiveness) and practice (reading frequency). These panethnic group differences in parenting were fully accounted for by differences in maternal education and household poverty. In contrast, although group level differences in children's math and literacy skills were substantively reduced by adding maternal education and household poverty, large and significant panethnic group differences remained. After accounting for socioeconomic resources, at the 48-month assessment, Hispanic children were 0.58 of a standard deviation behind in literacy and 0.42 of a standard deviation behind in math. These remaining differences in cognitive skills were unaffected by adding supportiveness and reading frequency to the models. These findings indicate that a substantial portion of observed Asian-Hispanic differences in children's early literacy and math skills may be due to factors outside the family such as child care, neighborhood quality, and extracurricular learning opportunities.

Cultural factors may also be evident in the dramatically different findings observed for Hispanic and Asian children. Specifically, the extent to which parents from these two panethnic groups are emigrating from countries that place high stakes in educational testing, in which the early teaching and training of children's cognitive skills is an expected parenting task. Emigrating from such a culture would predispose one's children for success in the U.S. educational system. There is limited evidence supporting the idea that a large percent of Hispanic immigrant families in the U.S. emigrated from cultures in which the early teaching and training of schooling related skills is inconsistent with the parenting priorities during the preschool years (Delgado-Gaitan, 2004; Hammer, et al. 2007; Reese, et al., 1995; Reese & Gallimore 2000;

Rodriguez & Olswang, 2003). In comparison, a large percent of Asian immigrant families in the U.S. emigrated from cultures in which the early teaching and training of schooling related skills is an expected part of the parenting role (Chao & Tseng, 2002; Huntsinger, Jose, Liaw, & Ching, 1997; Wu, 1996).

In contrast to our hypotheses regarding the importance of acculturation in predicting intra-panethnic group differences, we found that after accounting for maternal education and household poverty, mother's foreign birth status was not significantly associated with parenting practices or children's cognitive skills. However, language environment, which is likely a more sensitive measure of acculturation than nativity, was significantly associated with parenting practices. This is consistent with prior research linking language acculturation with the adoption of mainstream parenting (Cabrera, et al., 2006; Goldenberg, et al., 2005). Despite its association with parenting practices, language environment was generally not significant for children's cognitive skills. Specifically, being in a bilingual home was the only acculturation variable that was important for children's cognitive skills, and only for Hispanic children. The finding that Hispanic children in bilingual homes, but not non-English dominant homes, had lower cognitive scores compared to children in English dominant homes is puzzling. Overall, for both panethnic groups, mothers' socioeconomic resources, rather than acculturation, was the important factor in accounting for differences in children's math and literacy skills.

The within Asian panethnic group analyses revealed significantly higher 48-month scores for children with Chinese ancestral origins relative to children with ancestral origins in India, Korea, Philippines, and Vietnamese. In general, after accounting for acculturation and socioeconomic resources, children with Chinese origins were a quarter or more of a standard deviation higher on literacy, and a third or more on math skills. This supports the argument that

in the U.S., ethnic support systems such as Chinese language schools are a key source of academic preparation and acceleration for Chinese-American children, as they provide children with not only supplemental instruction in academic subjects but also extracurricular programs, college preparation, and language instruction in both English and Chinese. These institutions also serve to reinforce cultural expectations about academic success, family obligations, and ethnic identity (Zhou, 2007).

These analyses are limited by our reliance on demographic measures of acculturation, specifically nativity and English language proficiency and preference. Acculturation is better measured by changes in core beliefs, values, attitudes, and behaviors, rather than simply amount of time in a particular country (Halgunseth, et al., 2006; Negy & Woods, 1992). Future research needs to examine these issues of between and within panethnic group differences in children's early cognitive development with Hispanic and Asian infants representing at least three generations (foreign born children, native-born children of foreign-born parents, and native-born children of native-born parents). As detailed by Zhou & Xiong, (2005) it is important to distinguish horizontal, upward, and downward mobility of immigrant children relative to their parents and relative to the U.S. norm. Zhou & Xiong argue that children of Asian immigrants may actually experience downward mobility relative to their parents while obtaining middle-class status. In contrast, children of Hispanic immigrants may experience upward mobility relative to their parents without making it into the middle-class. We speculate that similar outcomes may be found for generational differences in cognitive development.

In our measure of nativity, we included mothers who emigrated to the U.S. before age four (who could be called members of the 1.5 generation (Rumbaut, 2004) with native-born mothers based on the logic that their socialization and exposure to schooling occurs largely in the

U.S., rather than in their countries of origin. Therefore, these mothers would be expected to be more similar to their native-born counterparts than to other foreign-born mothers, who emigrated at later ages and thus received much of their socialization in the country of origin (Glick, et al., 2009). Research supports that age of immigration is associated with exposure to U.S. models and acquisition of English language skills (Cahan, Davis, & Staub, 2001; Von Figueroa-Moseley, Ramey, Kellner, & Lanzi, 2006; Portes & Rumbaut, 2001). By using age four as the cut-off point, our classification represents a somewhat conservative measure of U.S. socialization (i.e. only “very exposed” mothers are included) and a somewhat liberal measure of country of origin socialization.

These results have several key policy and practice implications, the first of which is the need for more within panethnic group research aimed at understanding the within group specific contextual factors (home, extended family, cultural community, neighborhood, and child care) that undermine and support children’s early cognitive development. Considering Hispanic families low aggregate level of maternal education and household poverty, it will be important to better understand the factors that support parents’ abilities to provide a cognitively stimulating developmental environment despite limited socioeconomic resources. The findings presented in this paper provide further evidence for the importance of early intervention programs, such as home visiting, Early Head Start, and First Start; programs aimed at increasing household resources, parenting quality, and children’s early exposure to cognitively stimulating developmental experiences.

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Table 1. Sample Characteristics

	Hispanic	Asian
Mother's Characteristics		
% Bachelor's or Higher	9.44	51.46
% > 184% poverty line	29.66	67.23
% Married	57.49	89.67
Age	27.03 (0.14)	30.66 (0.24)
% Foreign-Born	57.78	82.03
Language Environment at Home		
% English dominant	34.58	35.33
% Bilingual	35.57	58.22
% Non-English dominant	27.85	6.44
Parenting		
Supportiveness	3.95 (0.04)	4.27 (0.05)
Reading frequency	2.70 (0.04)	3.12 (0.04)
Cognitive Skills		
9 month	0.17 (0.04)	0.14 (0.04)
24 month	-0.20 (0.04)	0.10 (0.04)
48 month literacy	-0.35 (0.04)	0.59 (0.04)
48 month math	-0.29 (0.04)	0.51 (0.03)
N	1,550	1,300

Table 2. Models of Inter-Panethnic Group Differences 48-Month Parenting and Children's Cognitive Skills

	Parenting		Cognitive Skills	
	Supportive	Reading Freq.	Literacy	Math
Step 1				
Asian	0.30 (0.05) ***	0.41 (0.05) ***	0.95 (0.05) ***	0.80 (0.04) ***
$\Delta R^2$	.012	.032	.128	.081
Step 2				
Asian	0.19 (0.06) **	0.35 (0.06) ***	0.93 (0.05) ***	0.75 (0.05) ***
Foreign born mother	-0.11 (0.07)	0.04 (0.07)	0.06 (0.07)	0.09 (0.07)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.35 (0.06) ***	-0.27 (0.07) ***	-0.27 (0.08) ***	-0.24 (0.07) **
Non-English environment	-0.77 (0.09) ***	-0.51 (0.08) ***	-0.36 (0.10) **	-0.40 (0.10) ***
$\Delta R^2$	.136	.044	.020	.016
Step 3				
Asian	-0.07 (0.06)	0.11 (0.06)	0.60 (0.07) ***	0.43 (0.06) ***
Foreign born mother	-0.10 (0.07)	0.04 (0.07)	0.06 (0.07)	0.08 (0.06)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.26 (0.06) ***	-0.21 (0.06) **	-0.19 (0.07) *	-0.13 (0.07) *
Non-English environment	-0.53 (0.09) ***	-0.35 (0.08) ***	-0.14 (0.10)	-0.12 (0.09)
No high school	-0.20 (0.07) *	-0.08 (0.06)	-0.05 (0.07)	-0.09 (0.07)
High school diploma	Omitted	Omitted	Omitted	Omitted
Associate	0.25 (0.07) **	0.17 (0.07) *	0.17 (0.07) *	0.14 (0.07) *
Bachelor	0.28 (0.08) ***	0.31 (0.08) ***	0.31 (0.09) **	0.25 (0.08) **
Post graduate	0.40 (0.11) ***	0.60 (0.08) ***	0.84 (0.15) ***	0.65 (0.09) ***
Household poverty	-0.09 (0.03) *	-0.06 (0.02) *	-0.11 (0.03) ***	-0.17 (0.03) ***
$\Delta R^2$	.066	.044	.079	.080
Total $R^2$	.228	.122	.307	.319

Notes. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Analyses include child's gender, whether child was firstborn, child's age in months at assessment, urbanicity, and region of the country.

Table 3. Models of Intra-Panethnic Individual Differences in 48-Month Parenting and Children's Cognitive Skills: Hispanic Families

	Parenting		Cognitive Skills	
	Supportive	Reading Freq.	Literacy	Math
Step 1				
Foreign born mother	-0.12 (0.08)	0.06 (0.08)	0.06 (0.08)	0.11 (0.08)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.35 (0.08) ***	-0.27 (0.08) **	-0.32 (0.09) **	-0.28 (0.08) **
Non-English environment	-0.77 (0.10) ***	-0.53 (0.09) ***	-0.37 (0.11) **	-0.40 (0.08) ***
$\Delta R^2$	.146	.048	.031	.019
Step 2				
Foreign born mother	-0.11 (0.07)	0.07 (0.08)	0.06 (0.07)	0.09 (0.07)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.24 (0.07) **	-0.20 (0.07) *	-0.23 (0.08) *	-0.15 (0.08) *
Non-English environment	-0.52 (0.10) ***	-0.36 (0.09) **	-0.17 (0.11)	-0.13 (0.10)
No high school	-0.21 (0.08) **	-0.10 (0.06)	-0.06 (0.08)	-0.09 (0.08)
High school diploma	Omitted	Omitted	Omitted	Omitted
Associate	0.27 (0.08) **	0.18 (0.08) *	0.14 (0.08)	0.13 (0.08)
Bachelor	0.30 (0.09) **	0.28 (0.10) *	0.24 (0.12) *	0.20 (0.10) *
Post graduate	0.35 (0.16) *	0.68 (0.13) ***	0.83 (0.24) **	0.74 (0.16) ***
Household poverty	-0.08 (0.03) *	-0.06 (0.03) *	-0.10 (0.03) **	-0.17 (0.03) ***
$\Delta R^2$	.067	.044	.072	.079
Total $R^2$	.231	.099	.192	.255

Notes. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Analyses include child's gender, whether child was firstborn, child's age in months at assessment, urbanicity, and region of the country.

Table 4. Models of Intra-Panethnic Individual Differences in 48-Month Parenting and Children's Cognitive Skills: Asian Families

	Parenting		Cognitive Skills	
	Supportive	Reading Freq.	Literacy	Math
Step 1				
Foreign born mother	0.10 (0.09)	-0.15 (0.10)	0.14 (0.11)	-0.01 (0.09)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.29 (0.08) ***	-0.23 (0.07) **	0.01 (0.08)	-0.03 (0.08)
Non-English environment	-0.50 (0.18) *	-0.41 (0.15) *	-0.41 (0.12) **	-0.60 (0.19) **
$\Delta R^2$	.032	.034	.009	.022
Step 2				
Foreign born mother	0.09 (0.09)	-0.14 (0.10)	0.15 (0.11)	-0.02 (0.08)
English environment	Omitted	Omitted	Omitted	Omitted
Bilingual environment	-0.31 (0.07) ***	-0.23 (0.08) **	-0.01 (0.07)	-0.03 (0.07)
Non-English environment	-0.28 (0.20)	-0.13 (0.16)	0.09 (0.12)	-0.09 (0.18)
No high school	0.17 (0.15)	0.32 (0.16) *	-0.33 (0.13) *	-0.30 (0.14) *
High school diploma	0.22 (0.11) *	0.37 (0.10) ***	-0.49 (0.10) ***	-0.37 (0.10) ***
Associate	0.04 (0.10)	-0.17 (0.10)	-0.05 (0.10)	-0.07 (0.09)
Bachelor's degree	Omitted	Omitted	Omitted	Omitted
Post graduate	0.15 (0.12)	0.16 (0.07) *	0.44 (0.08) ***	0.29 (0.09) **
Household poverty	-0.11 (0.05) *	-0.08 (0.05)	-0.22 (0.05) ***	-0.23 (0.05) ***
$\Delta R^2$	.054	.068	.147	.133
Total $R^2$	.182	.158	.347	.343
Detailed Ancestral Descent Models				
	Literacy		Math	
	Model 1	Full Model	Model 1	Full Model
China	Omitted	Omitted	Omitted	Omitted
India	-0.24 (0.10)	-0.13 (0.10)	-0.53 (0.09) ***	-0.44 (0.09) ***
Korea	-0.65 (0.19) **	-0.49 (0.20) *	-0.50 (0.13) ***	-0.42 (0.14) **
Philippines	-0.53 (0.11) ***	-0.33 (0.12) *	-0.57 (0.10) ***	-0.45 (0.10) ***
Vietnam	-0.88 (0.11) ***	-0.49 (0.11) ***	-0.81 (0.18) ***	-0.42 (0.13) **
Foreign born mother		0.03 (0.12)		-0.05 (0.10)
English environment		Omitted		Omitted
Bilingual environment		0.01 (0.09)		0.01 (0.07)
Non-English environment		0.03 (0.16)		-0.22 (0.16)
No high school		-0.18 (0.14)		-0.13 (0.18)
High school diploma		-0.41 (0.11) **		-0.32 (0.11) **
Associate		-0.04 (0.10)		0.04 (0.10)
Bachelor's degree		Omitted		Omitted
Post graduate		0.28 (0.09) **		0.20 (0.09) *
Household poverty		-0.24 (0.05) ***		-0.23 (0.05) ***
Total $R^2$	.275	.369	.295	.392

Notes. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Analyses include child's gender, whether child was firstborn, child's age in months at assessment, urbanicity, and region of the country.

Figure 1. Standardized Cognitive Scores Based on Panethnicity

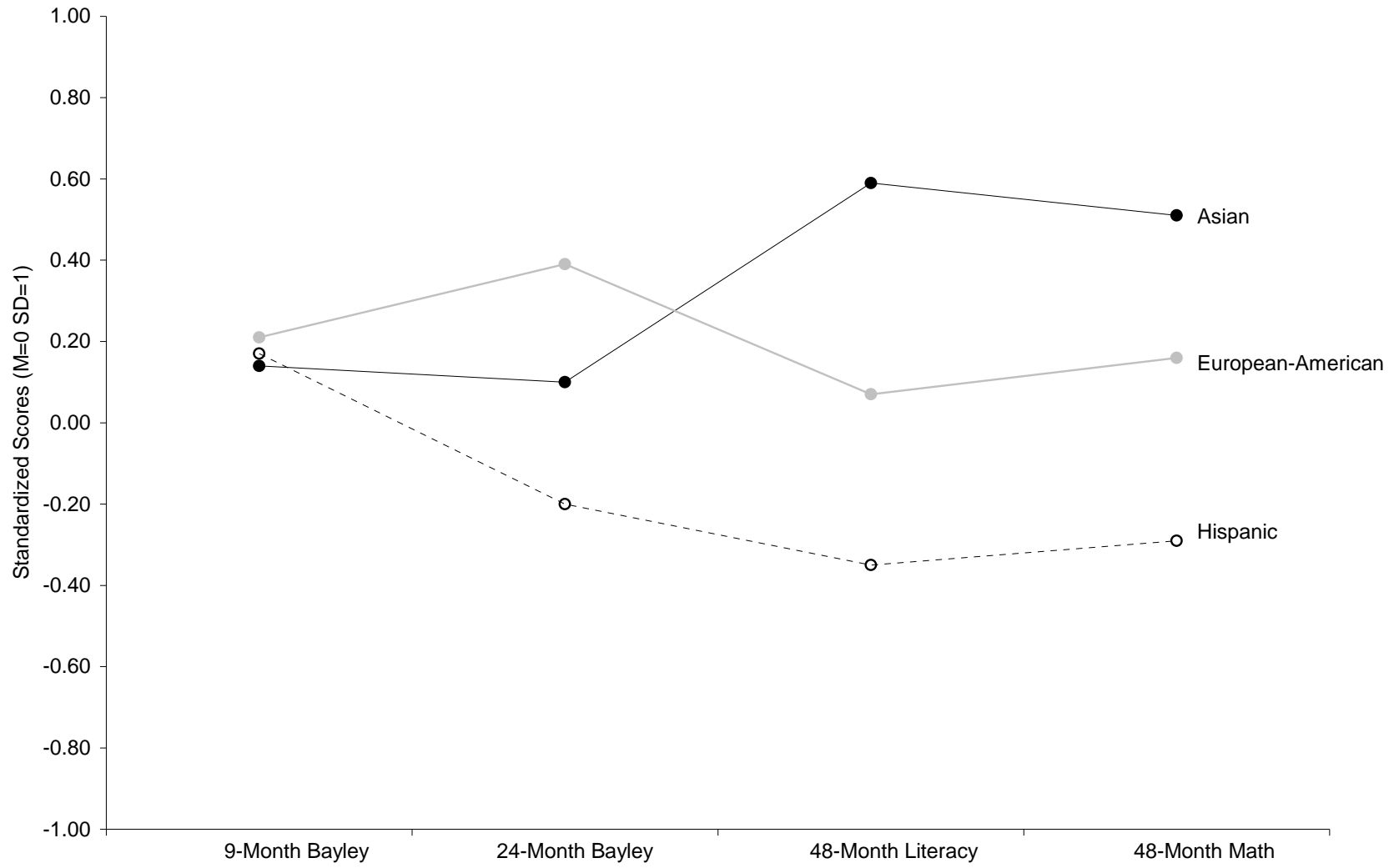
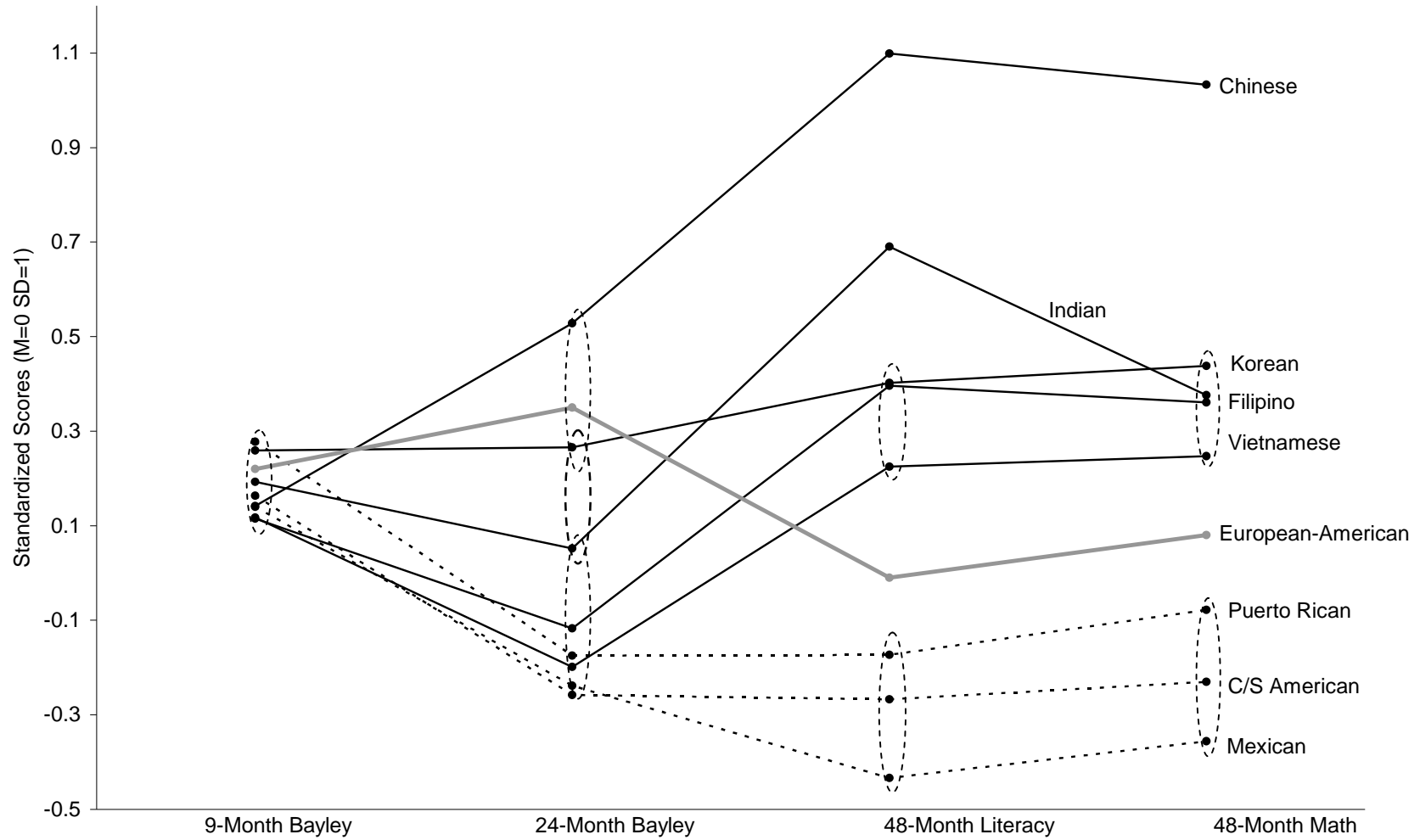


Figure 2. Standardized Cognitive Scores Based on Detailed Ancestral Descent Categories



Note: Dashed ovals indicates groups that are not significantly different from each other.