

Disentangling the Effects of Nativity Status, Race/Ethnicity, and Country of Origin to
Better Predict Educational Outcomes for Young, Immigrant Children

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By

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DEDICATION

This is dedicated to my loving and supportive family: My parents - Neire and John, who seem to have an endless supply of love, support, and guidance. My brothers – John, Mark, Matthew, Derek, Blake, and Chase, who remind me what family is all about. My husband - Miles, who has been by my side and supported me through the adventures of graduate school, and our “kids” - Bruenor and Scarlett, who make sure the house never feels empty.

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ABSTRACT

DISENTANGLING NATIVITY STATUS, RACE/ETHNICITY, AND COUNTRY OF ORIGIN TO BETTER PREDICT EDUCATIONAL OUTCOMES FOR YOUNG, IMMIGRANT CHILDREN

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Though much valuable research has been conducted on the academic achievement and development of school-age immigrant youth, we know much less about the early academic competencies of younger immigrant children. This study describes the school readiness of 2,194 low-income children receiving subsidies to attend childcare with emphasis on how nativity status (generation), race/ethnicity, and national origins might influence children's preparedness for kindergarten. The Learning Accomplishments Profile – Diagnostic (LAP-D), was used to measure cognitive and language skills, while teacher-report on the Devereux Early Childhood Assessment (DECA) measured socio-emotional protective factors and behavior. A school readiness screener administered at the beginning of the kindergarten year (Early Screening Inventory; ESI-K) and end of year grades for kindergarten, 1st, and 2nd grade were also examined. Results demonstrate variation does exist in school readiness according to nativity, ethnicity, and national

origins. First- and second-generation immigrants lagged behind non-immigrant children in cognitive and language skills but excelled by comparison in socio-emotional skills and behavior. First-generation immigrant children had slight advantages over the other two nativity groups in early academic grades. In many cases, first-generation immigrant children showed more advanced development than second-generation immigrant children, providing some evidence in the early years for the *immigrant paradox*. The present study raises awareness regarding strengths immigrant children bring with them from a very young age and provides a starting point from which these strengths can be built upon to encourage their success and later academic achievement.

INTRODUCTION

The immigrant population in the United States has been growing steadily since the enactment of the immigration act of 1965 (Hao & Bonstead-Bruns, 1998). According to the U.S. Census Bureau (Larsen, 2004), the United States is home to 33.5 million foreign-born persons constituting 11.7 percent of the U.S. population. Further, 8.9 percent of the foreign-born population is under 18 years of age. If children who have at least one immigrant parent are included, the first- and second-generation immigrant population of the United States reaches nearly 55 million people (Portes & Rumbaut, 2001). Immigrant children are indeed the fastest growing sector of the US population (Landale & Oropesa, 1995 as cited in Suarez-Orozco, C., 2001) and children of immigrants now account for nearly one in five of all US children. In addition, although not all English Language Learners (ELLs) (children who speak English as a second language) are immigrants and visa versa, the estimate that there are now over 3.5 million youth enrolled in ELL programs in U.S. schools calls attention to the kinds of educational policy issues being raised by increasing immigration (Conchas, 2001).

While investigations have described disadvantages and educational attainment gaps associated with immigrant status (Fuligni, 1997; Leventhal, Xue, & Brooks-Gunn, 2006; Perriera, Chapman, & Stein, 2006), they have also found that many immigrant families afford their children important protective factors that contribute to their

academic success (Brandon, 2002; Frome & Eccles, 1998; Kao & Tienda, 1995; Ogbu & Simmons, 1998; Suarez-Orozco, C. & Suarez-Orozco, M., 1995). Often these findings are differentiated by the ethnicity or country of origin of the participants, suggesting socio-economic, cultural, or historical factors play a part in the adjustment of immigrant families and children to a new educational system. Further, the observation that some recent immigrant children demonstrate an academic advantage over native-born children, an advantage that diminishes over time and generation, also known as the *immigrant paradox* (Akiba, 2007; Bankston & Zhou, 1997; Brandon, 2002; Landale, Oropesa, Llanes, & Gorman, 1999; Rong & Brown, 2001; Suarez-Orozco, C. & Suarez-Orozco, M., 1995, 2001), is something that warrants further investigation and understanding.

Much of the research on the educational attainment of immigrant children has been conducted with school-age children and adolescents. This thesis will briefly summarize some of the overarching issues that have come out of this work with older youth, but the central goal is to discuss what is known to date regarding the developmental and educational trajectories of preschool-age immigrant children, a much more nascent area of investigation. Although many questions remain, researchers have begun to delineate and explain patterns observed in the preschool enrollment, school readiness, and effectiveness of early education for immigrant children, and such findings will be discussed to provide context and justification for the present study.

A Challenging Transition

Immigrant youth have often been shown to be at an academic disadvantage when compared to their native-born peers and the question of why this pattern occurs is an area

of great investigation and debate among researchers (Kao & Tienda, 1995; Leventhal et al., 2006; Portes & Zady, 2001; Rong & Brown, 2001). That many immigrant children struggle academically is not surprising considering the extensive challenges their families face while navigating a new social context (Fuligni, 1997; Leventhal et al., 2006; Perriera et al., 2006). For instance, in a series of extensive interviews with first-generation immigrant parents living in North Carolina, Perriera et al. found that they were coping with significant personal losses, such as being separated from family and unexpected shifts in socio-economic status. They were also experiencing generalized anxiety associated with a new environment and overcoming a language barrier. In navigating their new environment, families were encountering unfamiliar racial, socioeconomic, and community dynamics and some reported experiencing negative stereotypes or discrimination from school personnel. Finally, many immigrant parents noted obstacles in accessing healthcare for themselves and for their children (Perriera et al., 2006). Other research finds that immigrant children are more likely to come from families with low socioeconomic status, more parental stress, and less exposure to English in the home, compared to native-born children (Farver, Xu, Eppe, & Lonigan, 2006; Hernandez, 2004; Leventhal et al., 2006).

The Immigrant Advantage and the Immigrant Paradox

Although many immigrant children face difficulties that put them at risk for low academic achievement and psychological well being, they have also been shown to have a number of protective factors that may help them excel. For instance, the decision to migrate to a new country can often be understood as a protective parenting decision.

Many Latino parents report moving to the United States so their children can obtain a better education, secure a better economic future, grow up in a safer environment, and reconnect with family (Perreira et al., 2006). This indicates that many immigrant parents are taking an active role in fostering the well-being and success of their children.

Generally, immigrants appear to have a more optimistic view of succeeding in U.S. society than involuntary minority groups (Kao & Tienda, 1995; Ogbu & Simmons, 1998; Suarez-Orozco, C. & Suarez-Orozco, M., 1995) and have been shown to have greater academic motivation than domestic groups (Frome & Eccles, 1998). For example, in a study of the effects of the attitudes and behaviors of immigrant children and their families on academic achievement, Fuligni (1997) found that even after controlling for ethnicity, immigrant students emphasized educational success more than native-born peers. Family can also have an indirect role in academic motivation. Some immigrant groups tend to have a stronger sense of family obligation and responsibility that may motivate them academically (Berry, Phinney, Sam, & Vedder, 2006; Fuligni, 1997). Immigrant children are also more likely than children from non-immigrant families to have parents who are married (Brandon, 2002; Leventhal et al., 2006) which can provide greater overall stability and parental support for development.

Several researchers have studied what has become known as the *immigrant paradox*, a two-part pattern that emerges when following the educational and occupational accomplishment of successive generations of immigrants and their children (see Berry et al., 2006). The first part to the immigrant paradox is the observation that newly-arrived immigrants often come with many of the advantages and motivations

described above, contributing to strong social, educational, psychological, and health outcomes when compared to native-born groups, despite the many challenges they face. The second, and rather troubling, part of the immigrant paradox is that for many immigrants, these advantages begin to disappear with extended time in the United States and over generations, revealing a paradoxical pattern of initial advantage and then decline in life circumstances with increasing acculturation for immigrants (Akiba, 2007; Brandon, 2002; Landale et al., 1999; Rong & Brown, 2001; Rumbaut, 1997; Suarez-Orozco, C. & Suarez-Orozco, M., 1995, 2001). Most notably, such generational decline has been observed in the academic motivation and performance of many youth, as in Suarez-Orozco and Suarez-Orozco's (1995) findings that recent Mexican immigrant youth display strong academic motivation and desire for upward mobility while U.S. born Mexican-American youth tend to have oppositional attitudes toward schooling and achievement. The researchers draw attention to the negative effects that increasing awareness of, and exposure to, racial stratification and discrimination can have on the identities of minority immigrant youth, making it difficult for them to maintain the optimistic outlook with which their families arrived (Suarez-Orozco & Suarez-Orozco, 1995).

The immigrant paradox has been also observed in aspects of the home environment, such as parental living arrangements and levels of maternal stress and health. For instance, Brandon (2002) found that immigrant children are more likely to live in a two-parent household with parents who are married compared to native-born children. However, this is not the case for the third generation, for whom living with a

single parent is increasingly more common. In a study on the effects of Americanization on maternal stress and infant health, Landale and colleagues (1999) found that on average, foreign-born Puerto-Rican mothers have low levels of exposure to stressful life events such as domestic violence, reports of subjective stress, rates of harmful health habits like smoking, and rates of infant mortality when compared to U.S.-born Puerto Rican mothers. However, instead of maintaining this advantage, immigrant mothers who migrate before the age of 10 decline in these outcomes within the first generation. While still showing low levels of stress, they have smoking rates similar to those of U.S. mothers and their babies show similarly low birth-weight and infant mortality.

Finally, Fuller and colleagues (2008) shed some light on some paradoxical patterns in the relationship between infant health and later cognitive development for children of more or less acculturated Latina mothers when compared to White mothers. What they find is that less acculturated Latina mothers (measured by home language, nativity status, and years of residence) show comparable or stronger levels of pre and postnatal health practices when compared to White mothers, and their infants show more favorable health outcomes. However this is not true for more acculturated Latina mothers and their infants. Further, the maternal and child health advantages demonstrated by less acculturated Latina mothers and their infants do not appear to persist after 9 months of age, and their earlier strengths in the health domain do not translate into better cognitive abilities later. The infants of Latina mothers, who started off strong, are already slipping behind White infants in cognitive competence by 9 months of age.

These studies represent only a few examples of evidence pointing to an immigrant paradox in various domains of children's lives. It is not yet clear, beyond the potential effects of integration of immigrants into the racial stratification experienced by marginalized domestic groups, what specific processes are at work in producing these patterns of downward assimilation. However it does appear that retention of ethnic identity, values, and community ties can be beneficial for the educational attainment of some immigrant youth (Akiba, 2007; Bankston & Zhou, 1997; Rong & Brown, 2001; Rumbaut, 1997). Community can play a role in such ethnic retention for immigrant children, especially if the family settles in an area where there is a niche of immigrants from the same country, because they may experience some protection from social marginalization by identifying with a subgroup (Fordham & Ogbu, 1986). These families can more easily maintain their cultural identity by interacting with others who share their values and practices. Part of the process may involve the determination of these parents to shield their children from potentially harmful cultural practices and beliefs in the host country, such as certain attitudes toward authority, discipline, homework, peer relations, and dating (Rong & Brown, 2001; Suarez-Orozco, M., 2001). Whether evidence of the immigrant paradox exists in children's school readiness skills and early academic outcomes is an empirical question that will be addressed in this study.

Race, Ethnicity, and Country of Origin

Many of the above patterns have been observed through comparisons of immigrant and native-born children. However, it is important to note that because immigrants themselves are a highly heterogeneous group, there is great within-group

variability in the success of immigrant children according to a variety of factors including race, ethnicity, and country of origin (Hao & Bonstead-Bruns, 1998). For example, as part of the Project on Human Development in Chicago Neighborhoods, Leventhal et al. (2006) found distinct verbal trajectories for each immigrant-race/ethnic group (Mexican-American, Black-American, White-American, Puerto Rican) reflecting “unique socioeconomic, historical, and cultural circumstances of each sub-group” (p.1372). These unique circumstances may explain why findings of higher educational attainment among recent immigrant students compared to native-born peers have often held Latino students as an exception to that pattern. Fuligni (1997) stipulates that this could be due to lower English proficiency and education of parents, leading to less opportunity to attain higher paying employment, and thus higher risk for children academically. Other factors such as the amount immigrant parents pay for childcare and time spent in child care have similarly been found to vary by ethnicity and SES (Brandon, 2002).

Research has also revealed differences in the academic success of immigrant children as compared to native-born children of the same racial or ethnic group. For instance, research on Black immigrant children has shown that they generally live in neighborhoods with higher SES (Leventhal et al., 2006) and have shown higher academic achievement than their non-immigrant Black peers (Kao & Tienda, 1995). Further, at least for the first and second generations, the median family income of African Americans (\$21,548) is lower than that of Black immigrants from Africa, Trinidad, Jamaica, Haiti, and the Dominican Republic (\$30,000) (Portes & Zady, 1996).

Some researchers have speculated that differences in outcomes for immigrant and native-born Black children and families may partly involve differences in immigrants' interpretations of unfavorable conditions in the host society compared to domestic, impoverished minorities (Portes, 1999). For instance, Ogbu and Simmons (1998) highlight the importance of considering that involuntary minority groups like Native Americans, Mexican Americans, and African Americans have a history of oppression related to colonization and, in turn, have experienced widespread discrimination that has been institutionalized. It is possible that this outlook on their place within society can lead to feelings of marginalization that affect academic attitudes, motivation, and in turn, academic success. Conversely, the optimistic outlook and strong desire for upward mobility characteristic of many recent immigrants may contribute to higher self-regard, values, and motives of immigrant children when compared to same-race peers whose families have lived here for generations (Portes, 1999).

Neighborhood Composition

Another contextual factor that appears to vary with outcomes for immigrant families and children is the composition of the neighborhood or community that receives them. Hao and Bonstead-Bruns (1998) highlight that between-family social capital is often generated from the relationships between the family and the neighborhood, the community, the labor market, and the local economy. They go on to explain,

Among immigrants, close and supportive networks in the ethnic community, a strong ethnic economy, acceptance by the primary labor market, entrepreneurship in the

local economy, and norms and values sustained by the ethnic group are important sources for forming and maintaining parents' and children's high educational expectations and for facilitating students' high achievement. (p. 192)

Portes (1999) found similar results. Specifically, the two groups that did best in American schools (Asians and Cubans) have established inroads in the community and may be able to provide greater social and cognitive supports to students. Rong and Brown (2001) suggested that their findings that Black Caribbean immigrants fare better in the second generation than Black African immigrants may be attributed to the different community situations for the two groups. Jamaicans' and Haitians' both have large communities and strong ethnic networks that may generate social capital. Parental authority and values can be reinforced through engagement with networks of churches, neighborhoods, and voluntary organizations. Without large ethnic communities, immigrants from African nations may face more difficulties in distinguishing themselves culturally, socially, and psychologically from native Black Americans and may assimilate into the mainstream culture at a faster rate (Rong & Brown, 2001).

Conceptualizing Generation and its Implications for Child Outcomes

Although there would appear to be a clear distinction between immigrants (those who are foreign-born) and non-immigrants (those who are native-born), these broad conceptualizations are insufficient to answer questions relating to the achievement and success of immigrant children. Lost in these definitions are complexities and processes captured by details of children's migration histories. These include factors such as

generation (whether it is the child [first generation] or just the parent [second generation] who was born in another country), children's ages at the time of migration, parents' ages at their time of migration, years spent in the U.S., and whether the child lives in a single status (both parents are immigrants) or mixed-status (only one parent is foreign-born) household (Oropesa & Landale, 1997; Rumbaut, 2004).

In a comprehensive analysis of the unique characteristics of different generational groups, Rumbaut (2004) provides a typology that takes these nativity influences into account. He uses what he refers to as "decimal" generations to further divide the first and second generations into more meaningful groups. Although a thorough discussion of all six decimal generations proposed by Rumbaut is beyond the scope of this thesis, three are particularly relevant to our discussion of young immigrant children, as research has consistently shown that children's outcomes differ according to their age and level of schooling at the time of migration (Cortes, 2006; Glick & White, 2003; Kao & Tienda, 1995; Oropesa & Landale, 1997). According to Rumbaut, research on immigrant children should take into account whether a child migrated during early childhood (ages 0-5), middle childhood (6-12), or adolescence (in their teens). Each of these age groups is faced with different developmental tasks and contexts of socialization and therefore, the processes of migration and subsequent acculturative change will likely be experienced differentially by each age group (Glick & Bates, 2008; Oropesa & Landale, 1997; Rumbaut, 2004).

Children who arrive before the age of five (the 1.75 generation) will have almost no recollection of experiences in their home country and will experience the bulk of their

language development and socialization in the United States. In contrast, children who arrive in middle childhood, between the ages of 6-12 (the 1.5 generation), will also experience much of their education in the United States, but they would have already begun to read and write in their native language. Finally, those who arrive in adolescence (the 1.25 generation) are thought to most closely represent the traditional notion of 1st generation because they will have experienced most or all of their education and early socialization in their home country. Rumbaut's research reveals that this 1.25 generation is most vulnerable to low educational attainment and occupational success, potentially due to migrating at a sensitive developmental age, and this finding is corroborated by other studies that have looked at age at immigration as a predictor of educational attainment (Chiswick & DebBurman, 2004; Cortes, 2006; Glick & Bates, 2008).

While Rumbaut's demarcation of the first-generation may represent the ideal for future research with immigrant children and families, the majority of studies to date have used the more traditional definition that groups all foreign-born persons into a single category of "first-generation." Within this literature, there exists some disagreement regarding the relationship between generation, duration of residency, and the success of immigrants and their children. These studies generally take one of the following forms: 1) longitudinal studies that follow development in the same children across time, 2) cross-sectional comparisons across different children who are studied at the same age and time point but who migrated at different ages, and 3) comparisons of children at one time point and age who differ with regard to generation. Some evidence from these studies seems to support classic assimilation theory (Gordon, 1964; Leiberson, 1980; Park, 1928), which

suggests that immigrants experience increasing accomplishment with each successive generation in the host country. This pattern may have been more common in the past, when most immigrants were of European descent and could more easily assimilate into the ethnic majority culture with each successive generation. However, because today's immigrants are more likely to be of an ethnic and language minority, assimilation may entail becoming part of a large ethnic underclass, making the relationship between generation and attainment more complex.

Recent research addressing this complexity has spurred the development of selective or segmented assimilation theory (Portes & Rumbaut, 1996; Portes & Zhou, 1993; Rumbaut, 1997; Suarez-Orozco, C. & Suarez-Orozco, M., 2001; Zhou, 1997). This research provides evidence for a segmented process through which different immigrant groups take different paths at different rates, as determined by characteristics of the group and the larger social context receiving them (Rong & Brown, 2001). In an analysis of the segmented assimilation process, Zhou (1997) elaborates this point. "In the long journey to becoming American, their [immigrants children's] progress is largely contingent upon human and financial capital that their immigrant parents bring along, the social conditions from which their families exit as well as the context that receives them, and their cultural patterns – including values, family relations, and social ties – reconstructed in the process of adaptation" (p. 999). Whether a family experiences upward or downward mobility with extended time in the host country depends largely on such factors.

Longitudinal studies have enabled researchers to also look across time at immigrant children's achievement within a single generation. Using data from the Children of Immigrants Longitudinal Study (CILS), Cortes (2006) found that, consistent with the classic assimilation perspective, the test score gap between lower-achieving immigrant children and higher-achieving non-immigrant children decreased the longer the immigrant children had been in the country. She also observed that it generally took about 5-10 years of residency in the U.S. for immigrant children to score similarly to their second-generation counterparts, but that immigrant children who came to the U.S. at an early age and did most of their schooling here tended to perform at least as well as their second-generation counterparts. According to Farver et al. (2006), years of residence in the U.S. was negatively associated with family size and parenting stress and positively associated with parents' literacy habits for Latino immigrant families.

Other studies highlight the potentially negative effects of longer residency in the U.S. Namely, that length of residence in the U.S. seems to be associated with declining health, school achievement, and aspirations (Kao & Tienda, 1995; Portes & Rumbaut, 2001; Suarez-Orozco, C. & Suarez Orozco, M., 1995). Research by Portes and Rumbaut (2001) on immigrant students in San Diego and Miami suggests that although English proficiency improves with length of residence, immigrant children gradually become less academically motivated as they adapt to U.S. culture. This pattern, however, is not restricted to language-minority immigrants. As evidenced in a study by Rong and Brown (2001), second-generation Black immigrants between the ages of 5-24 made educational progress relative to the first generation while third and later generations exhibited a

persistent pattern of lower educational attainment. In these examples, we begin to see support for an immigrant paradox.

When the focus is on very young immigrant children, what may be more important for their outcomes is the nativity status and age at arrival of their parents rather than the timing of their own arrival (Glick & Hohmann-Marriott, 2007). This is because immigrant parents who themselves arrived at a young age may be more acculturated, speak more English, and use child rearing practices that more closely resemble those of a native-born parent, while a more recent immigrant parent may be less acculturated, speak less English, and exhibit child rearing and parenting that is more consistent with cultural norms in the home country. The family home environment and early childcare/schooling environment are the two most important contexts for understanding the early experiences of immigrant children. I will therefore discuss each in detail, including the research on variation within these contexts, and how this variation is related to differential outcomes for young, immigrant children.

Family Characteristics and Parenting

Although the particular influence of the home environment may differ with the age and developmental stage of the child, background characteristics of the family and strategies parents use are undoubtedly important for immigrant children during the time of transition. Indicators of human capital, such as family socioeconomic status and parental education, consistently predict outcomes for all children (Gershoff, Aber, & Raver, 2005; Mcloyd, 1998), including those in immigrant families (Crosnoe, 2007; Magnuson, Lahaie, & Waldfogel, 2006), with higher income and parental education

related to more favorable educational outcomes. As discussed by Hernandez (in press), there is more diversity in parental education among immigrant groups than any other demographic indicator. That is, many immigrants come quite highly educated, but many others are unlikely to have completed high school or even middle school. Similar diversity is found with regard to income. Other research has demonstrated the stifling influence that socio-economic stratification and segregation based on race, ethnicity, or nativity can exert on children's success (Garcia Coll et al., 1996), making the expansion of programs and policies that aim to reduce this disparity paramount to the discussion of the well-being of immigrant children.

Researchers have also gone beyond indicators of human capital and examined aspects of social capital to explain influential family processes in immigrant families. In an investigation of parent-child differences in educational expectations of immigrant families, Hao and Bonstead-Bruns (1998) found that within-family social capital was often generated from parent-child interactions in learning activities. Social capital is generally defined as "a unique resource generated from social relationships" (p. 177), and within-family social capital is an important mechanism through which parents transmit and reinforce educational expectations, as well as strengthen the parent-child bond (Hao & Bonstead-Bruns, 1998). Further, Hao and Bonstead-Bruns found that greater agreement between immigrant parents and children with regard to education was related to higher academic achievement for children.

Perreira et al. (2006) call attention to the manner in which many immigrant parents actively seek to transform adversity and foster resilience in their children. The

Latino parents in Perreira et al's study did this by respecting their children's capacity to adapt, expressing interest in learning about resources to foster support for their children, encouraging bicultural coping skills in their children, and increasing communication with their children. Because very young children are likely to spend more time at home in the care of parents than at any other age, the home environment, including parental knowledge of child development, is important for children's outcomes in early childhood (Bornstein & Cote, 2004, 2007; Bradley, Corwyn, McAdoo, & Garcia Coll, 2001). However the research base on immigrant children in early childhood is still emerging and the field is only just beginning to explore how aspects of the home environment might differ between immigrant and non-immigrant children and how these differences may be related to variation in children's outcomes.

Measures of children's home environments typically include information on caregiver behaviors, objects, or events (Bradley et al., 2001). As explained by Bradley and colleagues (2001), "Ethnicity shapes what parents do, what children have, how children and adults spend their time, and the types of exchanges between family members" (p. 1846). In their study on the relationship between ethnicity and the home environment, they analyzed four versions of the Home Observation for Measurement of the Environment scale (HOME-SF; Caldwell & Bradley, 1984). Although poverty was found to have the strongest influence on children's home environments, the study did find independent variation in each domain of the home environment (e.g. access to learning materials, parental responsiveness, physical environment) according to parents' ethnicities. So not only are there ethno-cultural differences in children's home

environments, socio-economic stratification by race and ethnicity creates additional disparities as well (Bradley et al., 2001).

Glick and Bates (2008), using data from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B), investigated relationships between maternal nativity, maternal age at immigration, home environment, and children’s cognitive development among recent native-born (second-generation immigrant) children in the U.S. Differences according to race/ethnicity and mothers’ age at immigration were found in home resources, parenting practices, and children’s cognitive development at 24 months. Importantly, at 24 months of age, children of immigrant mothers already demonstrated lower cognitive skills than children of native-born mothers. For all groups except Chinese-origin mothers, migrating during middle childhood and adolescence was associated with fewer home resources and less responsive parenting practices. Further, the risks associated with migrating during this sensitive developmental period were evident in lower cognitive scores for the children of the immigrant mothers. Variables related to family resources such as income, access to private health insurance, and maternal education partially mediated differences in cognitive development at 24 months according to race/ethnic group and maternal immigrant status, as did responsiveness of parenting practices and frequency of reading to the child.

General knowledge about how to care for a child, how children develop, and what parents can do to foster their children’s development all contribute to a parent’s ability to provide a developmentally appropriate environment for their children’s growth (Bornstein & Cote, 2007). Because beliefs about and practices surrounding childrearing

can be highly culture-specific (Bradley et al., 2001; Rogoff, 2003) it is possible that differences between immigrant groups in knowledge about child development can translate into real differences in child outcomes (Bornstein & Cote, 2004; Harkness & Super, 1996).

To investigate this relationship, Bornstein and Cote (2004) surveyed middle-class Japanese and South American immigrant mothers on their knowledge of child development and care using the Knowledge of Infant Development Inventory (KIDI; MacPhee, 1981). They found that although the two groups of immigrant mothers scored similarly on the KIDI (72% for Japanese mothers and 75% for South American mothers), they both scored significantly lower than native-born, European American mothers (84%). Although immigrant mothers had strong knowledge about issues of health and safety, the majority of errors concerned normative aspects of children's development, most of which have been shown to be universal (Bornstein & Cote, 2004). The authors highlight that gaps in knowledge about normative child development can impact mothers' responsiveness to their children's needs, the mother-child relationship, and reporting of developmental progress to the child's pediatrician. Bornstein and Cote point the reader to research indicating that in the home countries of many immigrant parents, the community takes a larger role in monitoring individual children's development than is commonly seen in the United States. It is therefore not essential for mothers to do the extensive "baby research" that is common among native North American mothers. To address these potential variations in child rearing practices, the authors recommend robust community supports and connections to resources for immigrant families. One such avenue to

community support, and a potential resource for families, is early childhood education in the form of childcare and preschool programs.

Early Education for Immigrant Children

The extent to which children have a basic foundation of skills needed to begin and be successful in kindergarten has become a burgeoning topic in the fields of education, developmental psychology, and child policy. This is due in large part to a body of research showing that children who begin kindergarten already behind their peers in a range of developmental competencies have a hard time “catching” up later in schooling (NICHD Early Child Care Research Network, 2005) and are at risk for low academic achievement, grade retention, special education placement, and high school dropout (Ramey & Ramey, 1998). Fortunately, early education provides a promising solution; a quality preschool experience can prepare children for kindergarten and have positive effects that last through adulthood (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Schweinhart et al., 2004; Winsler et al., 2008). As has been discussed by Hernandez (in press), immigrant children are quite diverse and although many live in optimal circumstances, many more live in poverty (Brandon, 2004) and face various social and institutional barriers that can present challenges to their educational attainment, health, and psychological well-being (Fuligni, 1997; Leventhal et al., 2006; Perriera, et al., 2006). As such, early education can be a key factor in buffering immigrant children from these adversities by affording them the opportunity to learn skills that will ease their transition to formal schooling.

Enrollment

Unfortunately, many of the factors that suggest early childhood education could be an important facilitating factor for immigrant children are those that make it less likely they will be enrolled. Research on early child care and preschool enrollment for immigrant children consistently shows that on average, they are enrolled at much lower rates than native-born children (Brandon, 2004; Capps, Fix, Ost, Reardon-Anderson, & Passel, 2004; Crosnoe, 2007; Hernandez, 2004; Magnuson et al., 2006; Matthews & Ewen, 2006; Takanishi, 2004). For instance, according to a study by the Urban Institute using data from the National Survey of American Families (Capps et al., 2004), 66% of children with U.S. born parents are in some type of non-parental care (center-based, relative, non-relative home-based, nanny/babysitter) versus only 47% of children with immigrant parents. When restricted to just center-based care, children under age three with immigrant parents are half as likely to be enrolled as children with U.S. born parents (23% versus 11%). Another study using the Survey of Income and Program Participation found that 25% of children in native-born families were enrolled in center-based care compared to only 14% of children in immigrant families, and children in immigrant families were more likely than children in non-immigrant families to be in parent care (59% versus 44%) (Brandon, 2004).

In addition to studies showing differences in early education enrollment based on immigrant status, research has also found great variation in enrollment *among* immigrant groups depending on generation, ethnicity, and country of origin (Brandon, 2004; Chiswick & DebBurman, 2006; Hernandez, in press; Matthews & Ewen, 2006). In a

study by Chiswick and DebBurman (2006), first-generation 3-5 year old children were, on average, only slightly less likely to be enrolled in school than second-generation and non-immigrant children. However, there was substantial heterogeneity within immigrant groups according to country of origin. Another study using U.S. Census data found that among children from immigrant families, those from China, Haiti, India, Africa, Southwest Asia, and English-speaking countries had the highest rates of preschool or kindergarten enrollment (higher than the US-born average), while children in families from Central America, Indochina, Mexico, and the Pacific Islands had the lowest (lower than the US-born average) (Matthews & Ewen, 2006).

Although variation in early care and education enrollment based on nativity is well documented, the reasons for it are a continued subject of investigation. Cultural preference for parental care by immigrant families would appear to be one reasonable explanation, however multiple studies have found that the differences are more likely due to barriers accessing affordable child care (Chiswick & DebBurman, 2006; Hernandez, in press; Matthews & Ewen, 2006; Takanishi, 2004). The National Institute for Early Education Research study, using data from the 1999 National Household Education Survey, found that use of non-parental care increased with the child's age, if the mother was single, if the mother was college educated, and with higher family income (Barnett & Yarosz, 2007). That immigrant children are, on average, more likely to live in low-income households, have parents who are married, and have parents with less educational attainment provides one explanation for their reduced rates of non-parental child care (Brandon, 2004; Capps et al., 2004; Hernandez, 2004; Matthews & Ewen, 2006). Further,

although immigrant children are more likely to live in two-parent households compared to native-born children, they are less likely to have mothers that work and need full-time care for their children (Brandon, 2004; Capps et al; 2004; Hernandez, 2004).

In their human capital theory of immigrant preschool enrollment, Chiswick and DebBurman (2006) propose that the enrollment of immigrant children into early care is a function of pre-immigration conditions, parental education, parental income, family size, mother's labor, and duration in the host country (generation). A regression model that included these variables showed that after all these factors are taken into account, the probability of a child being enrolled in preschool is actually higher for first-generation (48%) and second-generation children (42%) than it is for children of native-born parents (38%). This suggests that the type of early care used by immigrant families is not just a function of cultural preference but that differences in family socio-economic background and human capital can begin to answer the question of why immigrant children have lower enrollment rates in early education than their native family counterparts.

School Readiness

Although growing attention to the educational attainment of immigrant youth has encouraged numerous studies on school-aged and adolescent populations, few studies exist to date on the state of immigrant children's development in early childhood, prior to entering formal schooling. These years are key because experiences and supports in early childhood set the tone for longer-term development (Ramey & Ramey, 1998).

Kindergarten and preschool were originally implemented into U.S. society to try to minimize inequality in educational attainment based on factors like race and income

(Meisels & Shonkoff, 2000). In fact, they were seen specifically as a way to integrate the multitudes of impoverished immigrant children into American society and provide supports for their success (Braun & Edwards, 1972). Over one hundred years later, as the U.S. socio-political context and typical immigrant profile have changed, we are still invested in awareness of the unique needs of children in immigrant families. Perhaps this is because this stance is consistent with American values of diversity and equality, and because the success of immigrants and their children is intricately tied to that of the nation as a whole.

Studies that have investigated the early development and school readiness of children in immigrant families begin to shed light on their overall levels of preparedness for schooling, their progress in specific domains (e.g. cognitive and socio-emotional development), and the effectiveness of the early education programs they participate in. Using data from the nationally representative sample provided by the Early Childhood Longitudinal Study (ECLS-K), Magnuson and colleagues (2006) found that preschool had a larger positive effect (22% increase) on the English language proficiency of children of immigrants mothers than it did for other children. Although there were no differences in the reading scores of English-proficient children in immigrant families and those in non-immigrant families, children in immigrant families did lag slightly behind children in non-immigrant families in math. Further, preschool attendance was associated with higher math and reading scores for both groups, even after controlling for family background. Therefore, the study found that preschool is just as beneficial for children in immigrant families as it is for children in native families, and it is most

beneficial (in terms of the child acquiring English) for children whose mothers speak a language other than English in the home.

When looking only at children in Mexican immigrant families, however, Crosnoe (2007) discovered that attending preschool did not seem to be as beneficial for these children as it was for children in native families. Like Magnuson and colleagues, and again using data from the ECLS-K, Crosnoe found that upon entering kindergarten, children in Mexican immigrant families lagged behind their native peers in mathematics. However, these differences were virtually eliminated when family socio-economic (e.g. poverty status and presence of father) and family environmental factors (e.g. learning environment and parental involvement) were taken into account. On the other hand, children in Mexican immigrant families showed socio-emotional strengths by exhibiting fewer externalizing behavior problems than children in native families, an effect that persisted even after family background factors were accounted for. They also showed more emotional maturity and competence in peer relations and in-class behavior. (Crosnoe, 2006).

Crosnoe points out that without knowledge of childcare quality, family socioeconomic factors proved to be the most important factor for children's math achievement in kindergarten. Finally, he expresses concerns at the findings that, in general, children in center-based care have been shown to exhibit slightly more behavior problems in later schooling than children who experienced parental care (Belsky, 1999; NICHD, 2005; Magnuson, Ruhm, & Waldfogel, 2007) and feels increasing access to preschool for immigrant children is worth the investment as long as it does not jeopardize

their socio-emotional strengths. That many immigrant children show both strengths and concerns in areas considered important for development suggests we should refrain from making global evaluations of their school readiness until we know more. Future studies that address multiple developmental domains for young immigrant children will give us a more nuanced understanding of where their strengths and concerns lie, and how their strengths can be built upon to foster better educational outcomes.

As with the literature on preschool enrollment, the heterogeneity of the immigrant community based on factors like race/ethnicity, generation, and country of origin, prevents us from being able to tell one, consistent story about how young immigrant children are performing overall. As with older immigrants, the few studies that exist on the competencies of very young immigrant children suggest segmented outcomes are evident even at a young age. Glick and Hohmann-Marriott (2007), using the ECLS-K, found that after controlling for family structure and background, first-generation immigrant children who migrated in early childhood (referred to in the study as the 1.5 generation) scored just as high as non-immigrant children on a math test in third grade. However, second-generation immigrant children scored significantly lower than both other groups. They also found interactions between generational status and race/ethnicity for immigrant children, highlighting that both must be taken into consideration when predicting outcomes.

Some of the generational differences in Glick and Hohmann-Marriott's study were accounted for by differences in early education experience and parent involvement such that when these factors were controlled, 1.5 generation immigrant children had a

slight advantage and second generation children no longer lagged behind. Finally, substantial variation in math performance by race/ethnicity and national origin was demonstrated that persisted over time. Test scores declined over time for Black children with native-born parents and 1.5 generation immigrant children from Mexico, while 1.5 generation east Asian immigrant children continued to score higher than all children including non-Hispanic White children of native-born parents. Selectivity of migration, or the reasons different groups tend to migrate and their circumstances in the home country, presents one potential explanation for why these nativity- and origin-based differences are evident at such a young age (Glick & Hohmann-Marriott, 2007).

These studies begin to paint the picture that on average, immigrant children enter formal schooling already behind their native-born peers in academic areas like reading and math. However, it is important that we acknowledge immigrant children's strengths and discuss how they can be built upon. For instance, it is notable that immigrant children are often described as well-behaved with strong social skills (Crosnoe, 2007; Suarez-Orozco, 2007) because kindergarten teachers often consider these areas to be more important for kindergarten readiness than academic knowledge and skills (Heaviside, Farris, & Carpenter, 1993; Lin, Lawrence, & Gorrell, 2003; West, Hausken, & Collins, 1995).

Methodological Considerations for the Study of Immigrant Groups

These and other influential studies have paved the way for the examination and interpretation of questions related to the achievement and well-being of immigrant children. However, we are still short of reaching a consensus or solution on how best to

anticipate the challenges faced by immigrant groups over time, and prepare the U.S. educational system to accommodate the influx of foreign-born children and their parents. Although we have some understanding of the achievement patterns of immigrant adolescents through a concentration of studies with that age group, we know very little about the development of children that arrive as preschoolers and whose parents are recent immigrants.

This may be because there have not been many large-scale data collection efforts on the competencies of the preschool population in the United States (e.g. Crosnoe, 2007; Glick & Hohmann-Marriott, 2007), so investigating these questions has not been a viable option for many researchers. Further, adolescents are able to articulate their experiences, perceptions, and values in a way that preschoolers are not and thus, are easier to study. However, the importance of early childhood as a period that sets the stage for later development situates it as a key period for studying issues related to immigration, development, and education. It should not be assumed that patterns of educational achievement seen in the adolescent immigrant literature hold for the youngest of children. Therefore, the present study will piece together outcome data on various subgroups of immigrant preschool children and try to tease apart which factors appear to be most important at this age. In the long run, the success of immigrant children is vital to the socioeconomic health of a diverse nation, and understanding which factors are most predictive of their developmental outcomes is the first step.

While reaching this understanding is a possible and worthwhile endeavor, getting there is not straightforward. Recent research has found that predicting outcomes for

groups of immigrant children is a great challenge due to the variation in levels of success for different groups and the complexity of factors influencing acculturation (Fuligni, 2001; Mattis, 2002; Perreira et al., 2006; Rong & Brown, 2001; Suarez-Orozco, M., 2001). One thing is clear: There can be marked differences in patterns of attitudes, behavior, and achievement between immigrants and native-born children, within the immigrant population according to ethnicity and country of origin, and within racial and ethnic groups according to immigrant status and length of residency. As such, the acculturation process should be thought of as dynamic, non linear, selective, and stemming from the interaction of a variety of cultural, ecological, individual, socio-historical, geographical, and temporal factors.

Race and Ethnicity

In light of the complexity inherent in the process that follows an immigrant family's migration to a new culture and social system, how can we tease apart the many factors involved in order to better predict outcomes and tailor curricula and interventions for the growing population of diverse, immigrant children? First, it is important to note that most ethnicity-based research on parenting and child development treats ethnicity as a static variable that defines a particular cultural group (Perreira et al., 2006). Fuligni (2001) stresses that educational practitioners need to move away from the conventional notion that equates each racial group with one culture and one ethnic identity. Rong and Brown (2001) discuss the danger in assuming that the racial identities of all Black youth are the same, regardless of community, country of origin, and social-cultural factors. Mattis (2002) argues that,

Broad labels such as ‘Latino’ and ‘African American’ obscure intracultural differences and lead researchers to assume homogeneity of culture where little homogeneity may exist. The term ‘Latino’ is applied broadly to individuals from nations (e.g., Puerto Rico, Dominican Republic, Nicaragua) that have very distinct histories and traditions. Similarly, the category ‘African American’ tends to be applied to people of American, Caribbean, and continental African descent who have distinct histories, traditions, and worldviews. These national-cultural differences are further complicated by such factors as generational identity and degree of assimilation. (¶ 8).

The present study will utilize pre-existing data that, with regard to the outcomes of different ethnic groups, has only been analyzed by race (e.g., Latino, Black, White). In order to acknowledge the above issues surrounding the construct of race and ethnicity, the present study will group children by more culturally-relevant ethnic variables, namely region of origin and country of origin, as well as retain race as a variable relevant to the development of immigrant children.

Changes Over Time

Although the variability in school adaptation and outcomes among groups of minorities is generally acknowledged in the literature, there have still not been many investigations into changes over time as different groups of immigrant youth adapt to U.S. schools. The question of why some immigrant students’ achievement decreases with length of residency is an urgent issue that can only be systematically studied with

longitudinal research (Suarez-Orozco, M., 2001). Fuligni (2001) notes that acculturation has often been inferred from cross-sectional studies that can't reveal much about the changes that result from children's experiences in a new society. He suggests studying both immigrant and native-born children over time and comparing the longitudinal trends. This comparative longitudinal approach can be used for multiple between- and within-group comparisons to provide a richer understanding of the acculturative process. The present study will utilize this comparative longitudinal approach, studying education-related outcomes for both native-born and immigrant children from the beginning of their 4-year old preschool year to the end of their first-grade year in the public school system. Although different measures were used across the three years of data, I will examine stability, or the relative ranks of groups over time, in order to assess changes over time. In addition, this three-year investigation will prepare the study for further longitudinal investigation in the future, as additional public school data (through at least grade four) are expected.

Generation

As with intraindividual comparisons, it is important to study different generations across time and development to acknowledge interindividual differences among immigrant groups. This can allow investigators to isolate acculturative change from shifts that would have occurred through the course of development had immigration not occurred (Fuligni, 2001). Rong and Brown (2001) agree that studies that fail to consider the effects of generation of residency in the U.S. on education "mask intra-ethnic group generational differences and conceal the possible interactions between the effects of

ethnicity and of generation on schooling” (p. 544). Accordingly, the present study will utilize data on parent and child country of origin to examine outcomes for 1st generation, 2nd generation, and non-immigrant children.

Developmental Domains

Research suggests that acculturation is not a linear, ubiquitous process. In other words, acculturation does not occur at the same rate and in the same way for all immigrants. Immigrant children and their families most likely select some aspects of the host society to adopt and others to reject. As such, researchers should measure across many different developmental domains to give a more detailed picture of acculturative change. (Fuligni, 2001). Fortunately, the developmental assessments conducted with the children in the sample span a broad range of developmental, school readiness, and educational outcomes. As such, we can identify any patterns that suggest that the domains in which immigrant groups of children excel or struggle are not commensurate across immigrant subgroups.

For the preschool year, we have information on cognitive, language, and motor development as measured by an independent assessor, and on socio-emotional development and behavior concerns as reported by both parents and teachers. For the kindergarten year, we have data on school readiness constructs as well as end of year grades by subject area. Finally, for the 1st grade year, we have data on end of year grades by subject area.

Confounding Factors

The dynamic nature of acculturation means that there are many factors interacting in a multidirectional fashion to influence outcomes for immigrant children. Studies involving culture and ethnicity often present confounding factors like SES and maternal education. In a discussion of culture and intervention for different ethnic groups, Mattis (2002) argues that neighborhood characteristics (e.g., availability of jobs and other core resources, the incidence of violence) and school quality along with SES are important to consider because the line between these factors and culture can easily become blurred.

These constructs apply especially to the study of immigrant children because their families tend to settle in urban areas where there may be many risk factors other than navigating a new culture. The present study will investigate the relationship between various demographic and socio-economic factors and outcomes for children in the sample, and will take care to increase our certainty that any patterns we see are indeed due to the variables of interest and not something else. To investigate this possibility, the analyses will be run both with and without controlling for the background factors. Taking the above precautions will assist with beginning to tease apart the effects of immigrant status, race/ethnicity, country of origin, generation, length of residency, and various contextual variables on the achievement of immigrant children.

PRESENT STUDY

The present study utilized data from the Miami School Readiness Project conducted by the Early Learning Coalition of Miami Dade/Monroe, Florida International University, and George Mason University (Winsler et al., 2008). The location of the study is quite ideal because Miami has long been known as a “melting pot” with a large, diverse, immigrant population. In fact, in 2004, the United Nations Development Program (UNDP) ranked Miami as the city with the highest foreign-born population in the world at 59 percent (UNDP Human Development Report, 2004). The city has three official languages (English, Spanish, and Creole) and 71 percent of Miami-Dade County residents speak a language other than English in the home, substantially more than the U.S. average of 19 percent (U.S. Census Bureau, 2005). Consequently, the Miami preschool sample offers a unique opportunity to study and compare large samples of subgroups of young, immigrant children.

The following research questions were addressed in this study: 1) How do the socio-emotional, behavioral, cognitive, language, and motor skills of low-income preschool children, as well as gains in those skills across the preschool year, vary between those who are immigrants (1st and 2nd generation) and those who are not? 2) Does this influence of nativity status on children’s pre-academic and socio-emotional

skills, and/or gains in those skills, vary across different race/ethnic groups¹? 3) Within the group of immigrant children, how much do a) region of origin (e.g. Central America, South America, Caribbean, etc.) and b) country of origin matter for socio-emotional, behavioral, cognitive, language, and motor skills, as well as gains in those skills across the preschool year? 4) How are the subgroups of different immigrant and non-immigrant preschool children (Black 1st generation immigrants, Latino non-immigrants, etc.) doing in terms of school readiness when they begin the kindergarten year? How are they performing academically at the end of the kindergarten and 1st grade years?

The above questions sought to address how different subgroups of immigrant and non-immigrant preschool children are faring in terms of school readiness. As mentioned above, much of the literature on the education or achievement of immigrant children has been conducted with adolescents, and has found variation according to these factors. Thus I asked whether subgroups of preschool children follow similar patterns. With respect to what I think this study will find in terms of outcomes for preschool-age immigrant children, there are a few factors that come into consideration. Specific situational-contextual factors influencing a child's development, such as parenting and schooling, may evolve quite a bit with age. During the preschool period, the child's developmental context is controlled and monitored by the parent far more than during adolescence when youth are generally allowed more autonomy. Consequently, parenting practices should be looked at closely when predicting outcomes for immigrant preschool children.

¹ I refer to this construct as race/ethnicity because the variable we received from the agency included both ethnic categories (Hispanic/Latino) and race categories (White, Black).

Because preschool children remain in closer proximity to their parent(s) during early childhood when compared to other ages, there is more opportunity for the influence of varying child rearing styles. Many family background factors, like parental education, religious beliefs, and cultural practices, can influence child rearing, and in turn child outcomes. For instance, in communities where formal schooling is prevalent, such as the United States, child rearing styles serve to prepare children for the formal schooling environment by using verbal directives, quizzing, and reward systems in conversational play (Rogoff, 2003). Educational tools, including developmental assessments, also use verbal directives and quizzing to measure skills. Immigrant children with parents that were raised in a different educational system or in a community where formal schooling is not as prevalent as in the U.S. may not be as familiar with the “game” of demonstrating their knowledge and skills. In other words, because the assessments are norm-referenced on a nationally representative sample of U.S. children, they may not be appropriate for accurately measuring the skills and competencies of immigrant children. If this is the case, we may see an advantage for non-immigrant children in some of the pre-academic assessment results.

The U.S. is also somewhat unique with respect to its investment in early education and child care. In 2005, 73% of American children ages 3-5 attended some type of weekly, non-parental child care (U.S. Department of Education, 2005). With the exception of Europe, formal preschool is much less prevalent internationally (Kagan & Neuman, 2005). This means that many of the three- and four-year-old non-immigrant children in the sample are more likely to have had prior experience with some type of

educational or developmental curricula when compared with a child who is a recent immigrant. So not only do immigrant children have parents with less experience in the U.S. educational system, the children themselves have less experience as well.

If culturally-based parenting styles as well as parents' and children's experiences with formal schooling and the U.S. educational system can influence child outcomes, then it is plausible that these factors would affect 1st generation immigrant children more than 2nd generation immigrant children. Therefore, we may expect an advantage in pre-academic skills for non-immigrant preschool children when compared to those that are 2nd generation, and a similar advantage of 2nd generation immigrant preschool children when compared to those who are 1st generation.

The present study will also look at socio-emotional protective factors and behavior as reported by parents and teachers. Here, experience with formal education may be less important, while other factors may need to be weighed more heavily. For instance, as discussed earlier, immigration itself can be thought of as a parenting decision, demonstrating that the parents of immigrant children are invested in their future. The "immigrant advantage" has been described as a high motivation for achievement, upward mobility, and capitalization on opportunity. It is quite possible that these qualities are modeled, and therefore "passed down," to the children of immigrant parents, even as early as preschool. One assessment in the present study measures characteristics such as initiative, self-control, and attachment – which can be related, at least conceptually, to the motivation and parental closeness/support that describe many 1st generation immigrant parents. It would follow then, that we might expect an advantage

for 1st generation immigrant children in the areas of socio-emotional skills and protective factors.

On the question of how ethnicity is related to preschool development for immigrant and non-immigrant children, the picture is likely complex at this age as it is with older children. For instance, although some studies hold Latino immigrants as an exception to the “immigrant advantage” hypothesis, Miami contains large, close-knit communities of recently emigrated families from all over Spanish-colonized Caribbean, Central America, and South America. This ethnic support, coupled with the potential for less overall racial discrimination because of Miami’s large immigrant and minority populations, may make for a more even playing ground between immigrants who are Black, Latino, and White.

I don’t expect to see much variation in outcomes by region and country of origin, because many of Miami’s immigrants likely faced similar circumstances in their home countries, and emigrated for similar reasons - in search of more promising opportunities for themselves and their families. Further, all the families are similar in terms of socio-economic status, which has been found to be one of the most powerful predictors of early developmental outcomes (Duncan, Brooks-Gunn, & Klebanov, 1994). The only country where we might expect somewhat higher performance on developmental measures is Cuba, due both to the elevated socio-economic status of Cubans as a group in Miami, as well as their large numbers and close-knit community.

Because the preschool period is so key to later development, it will be interesting to see how these subgroups of immigrant and non-immigrant preschool children are

doing in terms of school readiness. If the “immigrant paradox” – the observation that some immigrant groups consistently thrive while others struggle - seems as salient in preschool as it does in adolescence, the situation may call for early intervention and preschool curricula that are more attentive to common issues faced by the various groups. If however, different subgroups of immigrant and non-immigrant children are virtually indistinguishable at this young age and disparate patterns of achievement only appear later in development, it would point to the later years of schooling and development for offsetting the sources of variation. I expect to find something in between, however, with group-level variation on some domains such as cognitive, language, and socio-emotional skills, but not others like behavior and motor development, and variation by some grouping factors such as immigrant status, but not others like region of origin.

These analyses represent a first step in understanding the development of low-income, urban, immigrant preschool children. Because the literature on older children shows differences in educational outcomes according to generation, ethnicity, and country of origin, it is crucial to understand whether similar differences exist with regard to school readiness, as it is a strong predictor of later success. Once this preliminary, comparative work is complete, the stage will be set to ask more informative questions about the development of immigrant children, including questions about the processes and mechanisms influencing the outcomes under investigation.

METHOD

Participants

Child participants consisted of 2,190 four-year old preschoolers attending center-based childcare in the community via childcare subsidies during the 2003-2004 academic year. This is a sub sample of a larger sample of children participating that year in the Miami-Dade School Readiness Project (Winsler et al., 2008). The larger group reflects essentially the entire population (excluding the 3% who did not give consent and the 22% who were unreachable for assessments) of four-year-old children in the county that year who were either attending a public school pre-kindergarten program or receiving childcare subsidies to attend some kind of (non-Head Start) childcare arrangement (center-based, family daycare, or informal care). The sample included here includes only those children who a) had sufficient data on child country of origin and parent country of origin to determine generation of child, and b) had at least some repeated measures (pre and post) child assessment data in the 4 year-old preschool year. Table 1 shows the sample sizes for child participants in each nativity group.

Table 2 shows available family demographic information for the entire sample broken down by immigrant status (1st generation child [n = 153] = child and parent born out of U.S.; 2nd generation [n = 981] = only parent born outside of U.S.; native [n = 1056] = both parent and child born in the U.S.). There were several statistically significant

differences across the nativity groups with regard to child and family characteristics. One notable difference is that 1st generation immigrant children (child born outside the U.S.) were more likely to be Latino (89%) than the other two groups while non-immigrant children with native-born parents were more likely to be Black (57%). Although our sample is composed entirely of low-income children qualifying for childcare subsidies by definition, even a few hundred dollars might make a difference in the resources parents can contribute to their child's needs (Gershoff, Aber, & Raver, 2005; McLoyd, 1998). Although the average income for the sample was around \$17,000, we found that parents of 2nd generation immigrant children made approximately \$1,000 more than either of the other groups of parents. With the largest family size (3.5) and second lowest income of the three groups, native-born parents may have had to stretch their resources the farthest of the three groups.

Foreign-born parents of 1st generation immigrant children were the most highly educated group (89.5% with H.S. diploma/GED or above) and this result may partially reflect the high numbers of foreign-born parents with children that migrate for educational purposes. Native-born parents followed in terms of education-level (83.8%), and foreign-born parents of 2nd generation immigrant children were the least likely to hold a H.S. diploma or GED (80.5%). Native-born parents were the youngest in age at approximately 29 years, while both groups of immigrant parents averaged approximately 33 years in age on average.

One striking difference between the three nativity groups was in the marital status of the parents. Few parents in the overall high-risk sample were married at the time of the

study, only 8.2 percent. However, foreign-born parents of 1st generation immigrant children were much more likely to be married (31.4%) than the other two groups. Only 3 percent of the native-born parents in the sample were married followed by only 10 percent of parents of 2nd generation immigrant children. Parent language followed the expected pattern of the highest rates of English for native-born parents and the highest rates of Spanish for foreign-born parents of 1st generation immigrant children. One interesting finding, however, is Creole was spoken by 12 percent of parents of 2nd generation immigrant children. With high levels of Spanish-speaking parents also in that group, the percentage of parents of 2nd generation immigrant children whose strongest language is English is only 14%.

In summary, although the entire sample is in poverty and therefore at elevated risk for educational difficulties, it appears non-immigrant children with native-born parents tended to have slight disadvantages in terms of child and family background characteristics while 1st and 2nd generation immigrant children had slight advantages. Non-immigrant children were more likely than the other groups to be Black, their families' low-income was divided amongst a larger average family size, and their parents were the youngest and least likely of the three groups to be married. Although non-immigrant children were most likely to be English proficient, there were still almost 20 percent of non-immigrant children whose strongest language was a language other than English.

First generation immigrant children were highly likely to be Latino and highly unlikely to be English proficient. Two distinct advantages 1st generation immigrant

children had over the other groups is that their parents were much more likely to be married and hold a high school diploma or GED, which could translate into more social capital and resources available to their children. Second generation immigrant children were also likely to be Latino and only 35 percent were English proficient. Immigrant parents of 2nd generation immigrant children had the highest income of the three groups but the lowest levels of education. Further, only 10 percent of these parents were married. These parents were also more likely than the other two nativity groups to speak Creole as their primary language. This snapshot of the family lives, on average, of the different nativity groups helps to provide some context when interpreting their relative competencies in skills considered important for school readiness.

Measures

Age four cognitive, language, and fine motor skills. The Learning Accomplishment Profile-Diagnostic (LAP-D; Nehring, Nehring, Bruni, & Randolph, 1992) was administered individually to children in a separate room of the child's school, both around the beginning of the academic year (PRE: September-October) and at the end of the school year (POST: April-May). For children receiving subsidies in the participating childcare centers, LAP-Ds were administered by 82 educated (typically MA level social workers or educational/school psychologists) assessors who had completed extensive multi-day trainings on the instrument conducted by personnel from the local collaborating university and the publisher of the instrument. These bilingual assessors arrived early in the day at a center and escorted children individually into another room for the approximately hour-long assessment as long as the child was not eating lunch or

taking a nap at the time. The assessor chose the language to use for assessment after asking the teacher which was the child's strongest language. In cases where this was not clear, the assessor made the language choice after talking with the child and establishing which language was more comfortable for the child. Assessors used original hands-on assessment materials for the task items with the child but entered the child's scores using palm-pilot recording devices which were then later up-synched to the master database. The subsidized care children at that center who were to be assessed that day were downloaded into the palm pilot in advance and assessors followed a random order in the case of multiple children within the same center whenever possible. The LAP-Ds for children attending public school pre-k programs were administered by children's classroom teachers, who also completed the same training program and conducted the assessments in the same way as above (i.e., with palm pilot assistance).

The LAP-D was selected by the participating community's multi-agency, early childhood assessment task force on the basis that (a) it corresponded well with the State's Early Learning Performance Standards (Florida Partnership for School Readiness, 2003), (b) it was a nationally standardized, norm-referenced instrument designed with curriculum-based, authentic program assessment in mind (Nehring et al., 1992), (c) it was available in both English and Spanish², (d) it assessed the dimensions of interest to the community (cognitive, language, and motor skills), (e) technology was available for assisting with large-scale, electronic administration and reporting, and (f) it had been shown to have good internal consistency reliability within the norming sample (alphas of

² It was not possible to assess children in Creole, but most Haitian children also spoke at least some Spanish or English.

.76 to .92) and good content validity and construct validity (correlations ranging from .40 to .87 between the LAP-D and the Battelle Developmental Inventory (DBI; Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984), Developmental Indicators for the Assessment of Learning – Revised (DIAL-R; Mardell-Czudnowski, & Goldenberg, 1983), and the Wechsler Preschool and Primary Scale of Intelligence – Revised (WPPSI-R; Wechsler, 1989).

The LAP-D yields scale scores in four domains, each with two sub-scale scores: cognitive (matching and counting), language (comprehension and naming), fine motor (writing and manipulation), and gross motor (body and object movement – not included in the present investigation). Child are presented with numerous and progressively more difficult tasks/items, starting after establishing a basal and ending after they reach ceiling (failure to complete three out of five tasks). For the current study, overall domain scores (cognitive, language, and fine motor), both raw and standardized national percentiles, will be used in analyses³. Internal consistency reliabilities for the LAP-D with the present Miami sample was .93 for the cognitive scale, .95 for language, and .94 for fine motor.

Age four socio-emotional protective factors and behavior. Children's social-emotional strengths and behavior problems were measured in the fall and spring with parent- and teacher-report using the Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999). The DECA was designed to create a profile of children's

³ An advantage to using percentile scores is that they describe how the child scored when compared nationally to other children of the same age. This means any gains seen across the year are indicative of an increased rate of development, rather than the child simply growing older. Percentile scores are also more comparable across measures than are raw scores.

social-emotional strengths or “protective factors” within a resilience framework (Werner & Smith, 1992). Teachers and parents separately reported (identical forms) on the frequency of children’s behavior by rating them on items comprising four sub scales: initiative, self-control, attachment/closeness with adults, and behavioral concerns. Because teachers are able to make judgments of children’s skills using norms from an entire class of children, teacher report only was used in this study. Teachers (the child’s lead teacher in the case of multiple teachers) completed the forms on their own time and had the choice of completing the form in English or Spanish.

Raters use a 5-point Likert-type scale to indicate how often within the past four weeks a child has exhibited behaviors described by the assessment items (0 = *Never*, 1 = *Rarely*, 2 = *Occasionally*, 3 = *Frequently*, and 4 = *Very Frequently*). Example items for the initiative subscale are “choose to do a task that was challenging for her/him” and “start or organize play with other children.” For the self-control subscale, example items include “listen to or respect others,” “control her/his anger,” and “handle frustration well.” Example attachment subscale items include “respond positively to adult comforting when upset” and “act happy or excited when parent/guardian returned.” The behavior concern scale includes items such as “fight with other children” and “have temper tantrums.” The first three subscales are combined to create an overall socio-emotional total protective factors score (bigger numbers indicating greater strengths) and the behavior concerns scale is scored such that larger numbers indicate greater problems with behavior. Total protective factors and behavior concerns are the two scales used here in the analyses in the form of raw scores and national percentiles.

During national standardization, the DECA teacher form was reported to have internal consistency reliability alphas of .94 for total protective factors and .80 for behavior concerns, and 1-3 day test-retest reliability of .94 for total protective factors and .68 and for behavior concerns (LeBuffe & Naglieri, 1999). Further, the authors report criterion-related validity in that DECA scores reliably distinguish children with known emotional and behavioral problems from normally developing children. Internal consistency reliability within this diverse sample was .94 for total protective factors, and .81 for behavior concerns. Reliability did not vary significantly as a function of language of form (Spanish, English) (Crane, Winsler, & Mincic, 2008).

Kindergarten School Readiness Assessments. During fall of the following kindergarten year, children were assessed with the School Readiness Uniform Screening System (SRUSS). The SRUSS was the first uniform statewide assessment program in Florida designed to measure the school readiness of all kindergarten students in the State. It is composed of two measures: the Early Screening Inventory (ESI-K) (Meisels, Marsden, Wiske, & Henderson, 1997) and two subscales of the Dynamic Indicators of Basic Literacy Skills (DIBELS) (Good & Kaminski, 2002). The ESI-K is a brief developmental screening instrument that identifies children who may need special education services in order to perform successfully in school. It addresses developmental, sensory, and behavior concerns in the following areas: visual motor/adaptive, language and cognition, and gross motor skills.

The DIBELS are a set of standardized, individually administered measures of early literacy development. They were developed to assess student development of

phonological awareness, alphabetic understanding, and automaticity and fluency with connected text. For the Miami sample, measures of phonological awareness include Initial Sounds Fluency (ISF) – a child’s skill to identify and produce the initial sound of a word, and Letter Naming Fluency (LNF) – a child’s ability to name randomly arranged letters. Children receive an overall score for each domain (bigger is better) based on the number correct and duration or response.

Early academic performance. In addition, to the ESI-K and DIBELS, a continuous score for averaged end-of-year grades was used for both kindergarten and 1st grade. Kindergarten grades were originally given as E for Excellent, S for Satisfactory, and U for Unsatisfactory. These were converted to a 3-point scale with E = 3, S = 2, and U = 1. For kindergarten, the score has a range of 1-3 and is averaged across 11 courses including language development, pre-reading, handwriting, math, science, Spanish, social studies, music, art, physical education, and English as a second language (ESOL). For the 1st grade year, grades were given in the familiar form of As, Bs, Cs, Ds, and Fs. These were converted to a 5-point scale with A = 5, B = 4, C = 3, D = 2, and F = 1. The score was averaged across 10 subjects including language arts, reading, math, science, Spanish, social studies, music, art, physical education, and English as a second language (ESOL). Because this scale is very different from that used in kindergarten and teachers grade children very differently when using letter grades, it was not possible to directly compare the marks from first grade to those reported earlier in kindergarten (as might be done using a repeated measures analysis).

Nativity Status. For the purposes of this study, and as is common in other research on immigrants, nativity status of the child was determined by a combination of the country of origin of the child and the country of origin of the reporting parent. Three groups were created, namely, 1st generation immigrants, 2nd generation immigrants, and non-immigrants. A 1st generation immigrant child was defined as having a country of birth other than the United States. A second-generation immigrant child was defined as having a U.S. country of origin with the reporting parent having a country of origin other than U.S. A non-immigrant is defined as having a U.S. country of origin with the reporting parent also having a U.S. country of birth⁴. Table 1 displays the numbers of 1st generation, 2nd generation, and non-immigrant children in the overall sample.

Region of Origin. The region of origin variable was created using country of origin of parent for both 1st and 2nd generation children. For the purposes of this study, the assumption was made that a 1st generation immigrant child would have been born in the parent's country of origin. Regions were created geographically and were based on the most common geographical regions in the sample, namely, South America, Central America, Cuba, Caribbean Islands (non-Cuban), and Other. Because Cubans represent such a large and influential group in Miami, and are therefore strongly represented in the preschool population, the decision was made to designate Cuba as a separate "region." Given the unique historical circumstances of the relationship between Cuba and United

⁴ Country of origin data were only available for the reporting parent. This left the possibility that children with a U.S. born reporting parent and a non-U.S. born, non-reporting parent would be deemed non-immigrants when by our definition, they should instead be in the group of 2nd generation immigrants. However, a full 92 percent of children in the sample were living in a single-parent home, suggesting that in most cases, it would be appropriate to weigh heavily the country of origin of the reporting parent.

States, and the status of most Cubans as political refugees, it seemed appropriate to analyze outcomes for Cuban children separately.

The countries that comprise each region of origin will now be presented in descending order by largest N to smallest. Countries in the South American region include Colombia, Venezuela, Peru, Chile, Brazil, Argentina, and Bolivia. Countries in the Central American region include Nicaragua, Honduras, Mexico, Panama, and Costa Rica. Countries in the non-Cuban Caribbean region include Haiti, Dominican Republic, Puerto Rico⁵, Jamaica, Bahamas, Virgin Islands, and Other West Indies. Countries in the Other category span Western Europe, Eastern Europe, the Middle East, Asia, and Africa and include Holland, Hungary, Estonia, Vietnam, Spain, Germany, Switzerland, United Kingdom, Russia, Israel, Lebanon, Syria, Turkey, Canada, and the Philippines. The category for Africa did not specify which African country, and the country of origin variable itself also included within it a category named “Other.” Additionally, there was a category named “Other Central and South American” and since it could not be determined which of these regions the children in this group belonged to, they were excluded from the analyses. It should also be noted that because the sample is composed only of children receiving subsidies to attend childcare, these countries of origin are not likely representative of the entire population of Miami preschoolers. The preschoolers in this sample are those whose families are most in need of financial assistance in order to provide their children with some type of child care. There are likely countries not

⁵ Though Puerto Rico is not a sovereign nation but a self-governing U.S. territory, I found it appropriate to analyze their outcomes as a group distinct from mainland U.S. children.

represented in our sample that are more represented in the higher income demographic in Miami, and are therefore able to comfortably pay for child care out of pocket.

RESULTS

To prepare the data for analysis, a number of steps were taken to ensure variables were in the proper format and assumptions of the tests were adequately met to avoid statistical bias in the results. 'Has data' variables were created for LAPD, DECA, average grades in kindergarten, 1st grade, and 2nd grade, and on SAT scores. Next, missing data analyses were conducted on each of these variables, both for the overall sample and by nativity group. Although data were sometimes MAR, large sample sizes allowed for continuation of data analysis without the need for imputation or weighting procedures. Fortunately most of the procedures used are quite robust to unequal variances, especially with a large sample size. However, close attention was paid to the homogeneity of variance and covariance matrices during analyses in case the uneven missing data caused the variances to be unequal across groups.

Outliers were not generally a problem, although in the few cases where they were extreme enough to warrant concern the relevant analysis was conducted with and without them to examine whether they impacted the means, standard deviations, and significance tests. Results were the same with and without outliers and therefore analyses are reported with outliers. There was slight skewness and kurtosis in some of the continuous variables, however in no case was it severe enough to consider transformation.

Some of the analyses, particularly research question two, which asked about the moderating effect of race/ethnicity on the relationship between nativity status and school readiness, were primarily concerned with interaction effects. Because investigating these interactions required breaking the three nativity groups down even further into smaller race/ethnic groups, there was a concern about small cell sizes, and whether the analyses would have enough power to detect a significant interaction effect. To determine whether there was reason for concern, post hoc power analyses were conducted using G Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) for the analyses where between-group interaction effects were the primary focus.

To investigate the nativity-by-ethnicity interaction for the LAPD scales, a power analysis was conducted within each race/ethnic group. With a hypothesized effect size of .2 and true sample size of 752 for Black children, it was found that power for main effects and interactions with a balanced design would be .99, more than adequate to detect a meaningful interaction if one existed. For Latino children $N = 1235$, and again the power to detect main effects and interactions was .99. However, because the cell sizes are very unequal ($n = 12$ for Black 1st generation immigrants), the power is greatly reduced from these estimates. Therefore, another analysis strategy was added to supplement the two-way ANOVAs, and this was to investigate the nativity effect within each race/ethnic group by selecting for race/ethnicity and rerunning the nativity analyses. Power analyses for the DECA outcome measure revealed similarly high power (.99) within each race/ethnic group, but again, because of unequal cell sizes it was decided to

run the nativity analysis separately within Latino and Black children, in addition to investigating the nativity-by-ethnicity interactions in the primary analyses.

Finally, univariate ANOVA analyses were conducted to determine whether children who had data at both pre and post (and were therefore included in the substantive analyses of the study) differed on any of the outcome variables from children who had only pre data. Results indicated that although the two groups did not differ on measures of language skills, fine motor skills, or teacher-rated behavior concerns, children who had data at both time points scored higher on the measure of cognitive skills (+ 3.7 percentile points), $F(1,2538) = 5.96, p < .05$, and higher on the measure of teacher-rated socio-emotional skills (+ 4.6 percentile points) at pretest, $F(1,2038) = 7.00, p < .05$. It is possible these differences are associated with differences between the groups in mobility, preschool attendance patterns, or other unmeasured differences. However because 1) the vast majority of the sample did have repeated measures data (84%), 2) the nativity groups did not differ with respect to their missing data, and 3) the population of interest is children who attend child care during the (entire) 4 year-old preschool year, I argue that these the exclusion of children without repeated measures data does not negatively impact the inferences I can make about the population of interest as a whole. However, it is important to note given that the least competent children were the ones likely to be missing at post that the estimates given here for how immigrant children in poverty are doing in terms of school readiness are slight overestimates.

For each school readiness domain (cognitive, language, socio-emotional protective factors, and behavior concerns), I start with broad conceptualizations of the

term “immigrant” and reach higher levels of specificity with each analysis. I first ask if children show similar levels of competence in these domains according to whether they are 1st generation immigrants with foreign-born parents, 2nd generation immigrants with foreign-born parents, or non-immigrants with native-born parents. I then ask what importance race/ethnicity (Latino, Black, White) has for the school readiness of children with and without immigrant parents and examine whether the overall generational patterns persist within each ethnic group. Next I look deeper into the specific national origins of the 1st and 2nd generation immigrant children, and ask whether diversity of school readiness outcomes exists according to region of origin and country of origin.

Univariate ANOVA, rather than MANOVA, was the analysis chosen for two reasons: 1) The scales of the LAPD and DECA are indeed distinct skills and are therefore best examined as separate DVs, 2) Power is generally reduced when trying to detect a multivariate effect. Analyses were conducted with and without controlling for demographic and family background factors that differed significantly between nativity groups, including parental education, income, marital status, and family size. Because results did not differ with and without inclusion of the covariates (perhaps because the sample is already limited to a narrow range of very low-income children) results presented here are without covariates in the models. Finally, Cohen’s *d* for significant between-subject effects are presented below and report the size of the effect between the groups with the highest and lowest means.

Research question 1: Generational variation in school readiness. The first research question addresses variation in the school readiness of 1st generation, 2nd

generation, and non-immigrant children, specifically, in multiple domains considered important for later development – cognitive, language, fine motor, socio-emotional protective factors, and behavior.

Pre-academic skills. The first set of repeated measures ANOVAs was conducted with nativity group (1st generation, 2nd generation, non-immigrant) as the between-subjects factor, time (pre, post) as the repeated measure, and each of the three pre-academic school readiness scales (cognitive, language, fine motor) as the DV for each univariate ANOVA. Let us first consider how each of the three nativity groups performed in terms of cognitive skills. Table 3 lists the means and standard deviations at the beginning and end of the pre-k year for each of the outcomes separately for each immigrant grouping. Figure 2 shows the overall pre and post cognitive scores for the three nativity groups. The first noteworthy pattern observable from the Figure is that all three nativity groups are making important and similar gains from the beginning to the end of the prekindergarten year in terms of cognitive skills (significant time effect, $F(1, 2037) = 36.10, p < .001$ [$d = .21$], nonsignificant group-by-time interaction, $F(2, 2037) = .70, p > .05$).

It is also important to point out that these results are in national percentiles, so it is not just maturation we are observing here - children are improving their relative standing compared to national norms for their specific age group by about 5-6 percentile points over the year. Also notable, however, is that, overall, the groups differed in their level of cognitive competence at both time points, group effect $F(2, 2037) = 19.33, p < .001$. Post hoc analyses using Fisher's LSD showed that non-immigrant children displayed

significantly higher cognitive skills ($M = 48.0$) than both 1st ($M = 43.0$) and 2nd generation immigrant children ($M = 41.4$) who were not significantly different from each other. The effect size for the difference between non-immigrant children and 2nd generation immigrant children is $d = .24$. Further, non-immigrant children reached the national average of the 50th percentile by the end of the year as a group whereas the immigrant children started and ended the year at greater cognitive risk below national averages in terms of cognitive skills.

The LAPD language measure was administered in what appeared to be the child's strongest language, and thus was intended to measure general linguistic competency. Figure 3 shows the pre and post language scores (regardless of language of administration) for 1st generation, 2nd generation, and non-immigrant children. As was seen earlier for cognitive skills, all three groups of children are at considerable risk but are making excellent and similar gains (i.e., 10 national percentile points) in language skills across the preschool year, time $F(1, 2037) = 120.10$, $p < .001$ ($d = .38$); nonsignificant group-by-time interaction, $F(2, 2037) = 1.61$, $p > .05$, but again, they differed in overall level of competence at any time point $F(2, 2037) = 44.54$, $p < .001$. Non-immigrant children (about 82% of them were assessed in English) demonstrated the strongest language skills (averaged across time $M = 40.7$). First generation immigrant children (78% of them assessed in Spanish) showed intermediate levels of language facility ($M = 35.3$), whereas 2nd generation immigrant children (65% of them assessed in Spanish) scored the lowest in language skills ($M = 30.9$). All pair-wise group LSD

differences were statistically significant and the effect size for the difference between non-immigrant children and 2nd generation immigrant children is $d = .37$.

A more interesting picture emerged when I added language of LAPD administration (English, Spanish) as another IV in the ANOVA and obtained a significant nativity-by-language of LAPD interaction, $F(2,2019) = 7.13$, $p = .001$ (see Figure 4). English-dominant/assessed Latino children followed the overall pattern discussed earlier and shown in Figure 3 that non-immigrant children ($n = 787$) averaged across time ($M = 43.7$) were more linguistically advanced (in English) than 1st generation immigrant children ($n = 27$; $M = 39.1$) who, in turn, were more advanced than 2nd generation immigrant children ($n = 315$; $M = 35.8$). However, for Spanish-dominant/assessed Latino children, 1st generation children were more linguistically advanced (in Spanish) ($n = 115$; $M = 34.5$) than both 2nd generation ($n = 598$; $M = 28.3$) and non-immigrant children ($n = 183$; $M = 27.9$).

As was found with the other pre-academic domains, children were making good and similar gains in fine motor skills as demonstrated by a significant effect of time, $F(1, 2037) = 46.20$, $p < .001$ ($d = .24$), and a non-significant group-by-time interaction, $F(2, 2037) = 2.00$, $p > .05$. Unlike the other domains, however, the three groups did not differ in terms of overall levels of fine motor skills, non-significant group effect, $F(2, 2037) = 2.62$, $p > .05$.

Socio-emotional skills and behavior. A second set of repeated-measures ANOVAs was conducted to assess nativity group differences over time in socio-emotional skills and behavior. This test used nativity status (1st generation, 2nd

generation, non-immigrant) as the grouping variable, time (pre,post) as the repeated measure, and each of the two socio-emotional scales (total protective factors, behavior) as the DV for each separate univariate ANOVA. In the area of socio-emotional protective factors, which includes initiative, attachment/closeness with adults, and self-control, we see from Figure 5 that children in all groups start the year at less risk than they did in the cognitive/language area (around the national average for 4-yr-olds) and univariate results show they make good and similar gains in social skills across the year, significant time effect $F(1,1501) = 38.54, p < .001$ ($d = .22$), non-significant group-by-time interaction, $F(2, 1502) = .02, p > .05$. The groups did differ, however, in the extent to which teachers rated them as having overall strengths in these areas, $F(2, 1501) = 7.29, p = .001$. Most importantly, we see that 1st generation immigrant children show considerable strengths in this area and were rated as significantly higher on socio-emotional protective factors across time points ($M = 62.6$) by their preschool teachers than both 2nd generation immigrants ($M = 55.1$) and non-immigrant children ($M = 52.8$). The difference between 2nd generation children and non-immigrant children was also significant, and the effect size between 1st generation immigrant children and non-immigrant children is $d = .36$.

Figure 6 shows the overall pre and post percentile scores for children's behavior concerns (bigger numbers indicate more problems) by nativity group. Overall, children in all groups remained relatively stable in their behavior concerns over the course of the school year according to teachers, non-significant time effect, $F(1, 1501) = .40, p > .05$, non-significant group-by time interaction, $F(2, 1501) = .05, p > .05$. However, as was seen with protective factors, the groups differed with respect to the mean levels of

behavior problems displayed, $F(2,1501) = 13.74$, $p < .001$, with 1st generation immigrant children displaying the fewest behavior concerns ($M = 45.9$) (being at about national averages for problem behavior for 4-yr-olds), followed by 2nd generation immigrant children ($M = 52.0$), and then non-immigrant children who posed the greatest behavior problems for preschool teachers ($M = 57.4$). All three pair-wise group differences were statistically significant and the effect size between 1st generation immigrant children and non-immigrant children is $d = .42$.

Research question 2: Combined effects of generation and race/ethnicity on school readiness. Because the ethnic composition of the nativity groups differed substantially (and a full crossing of child ethnicity [Black, White, Latino] with immigrant group [non, first, and second] by including ethnicity as an additional factor in the ANOVA was not possible due to prohibitively small cell sizes (only 5 white 1st generation children), I decided to instead use a two-level ethnicity variable that included only Latino and Black children while retaining the three-level generation variable. My rationale for this choice is that I am most interested in variation according to immigration history, and though White immigrants may constitute a large group nationally, they are not highly represented in Miami where we drew our sample. Thus results on multiple generations of the most highly represented ethnic groups would be of greater interest and utility to the local community than if we were to retain all three ethnic groups while collapsing the 1st and 2nd generations, another plausible analytic strategy we considered given sample size constraints.

Pre-academic skills. To answer this research question, the first set of univariate repeated measures ANOVAs included immigration status (1st generation, 2nd generation, non-immigrant) as one between-subjects factor, ethnicity (Black, Latino) as the second between-subjects factor, time (pre,post) as the repeated measure, and the three pre-academic school readiness scales (cognitive, language, fine motor) as the set of DVs

Univariate results for cognitive skills indicate that all groups were making good progress in this domain across the preschool year (significant time effect, $F(1, 1958) = 20.28, p < .001$). There was also a significant time-by-ethnicity interaction, $F(1, 1830) = 5.05, p < .05$, with Black children making slightly greater gains (about 8 percentile points) than Latino children (about 4 percentile points) across the year. There was no significant generation-by-ethnicity interaction. Some interesting patterns emerged when doing similar MANOVAS within ethnic group for Latino and Black children. For Black children we see the same univariate main effect described in the first research question for generation, $F(2, 737) = 6.22, p < .01$, where non-immigrants have an advantage, while a different pattern emerged for Latino children. Within Latino children, there was also a significant generation effect for Latino children, $F(2, 1221) = 2.97, p = .05$. However, unlike Black children, non-immigrant ($n = 372; M = 43.8$) and 1st generation Latino children ($n = 128; M = 42.6$) were indistinguishable in terms of cognitive skills, while only 2nd generation immigrant children lagged behind ($n = 724; M = 40.3$).

Univariate results for language skills indicate children are making good gains in language development across the preschool year, $F(1, 1958) = 51.66, p < .001$. Though ethnicity on its own was non significant, there was a significant time-by-ethnicity

interaction, $F(1, 1958) = 4.67, p < .05$, whereby, as with cognitive skills, Black children were making greater gains in language (about 14 percentile points) than Latino children (about 8 percentile points). As was done with cognitive skills, we asked whether the overall nativity group differences shown in Figure 3 held within each ethnic group (still overall, ignoring language of assessment). Within Latino children, generational group differences remained, group $F(2, 1221) = 6.76, p = .001$. However, the pattern was different than that which was discussed in research question 1 where both Black and Latino children were included (non-immigrants higher than 1st generation, who were in turn higher than 2nd generation). For Latinos, non-immigrant and 1st generation children demonstrated similar levels of language competence, whereas 2nd generation Latino immigrant children lagged behind. Generational differences were still present within Black children as well, group $F(2, 737) = 13.10, p < .001$, but for Black children, non-immigrant children scored significantly higher than the two immigrant groups.

Univariate results for fine motor skills revealed that all children were making good and similar gains across the year, significant time effect, $F(1, 1958) = 22.38, p < .001$. Unlike the other two pre-academic scales, Black and Latino children were making similar gains across the year in fine motor skills (no time-by-ethnicity interaction). Additionally, the non-significant generation effect for fine motor skills found in research question 1 held for both Latino children, $F(2, 1221) = 2.11, p > .05$, and Black children, $F(2, 737) = .30, p > .05$, so low-income children, regardless of immigration history or race, seem to show similar levels of fine motor development during the preschool year.

Socio-emotional skills and behavior. The second set of ANOVAs to answer research question 2 included immigration status (1st generation, 2nd generation, non-immigrant) as one between-subjects factor, ethnicity (Black, Latino) as the other between-subjects factor, time (pre, post) as the repeated measure, and the two socio-emotional scales (total protective factors, behavior) as the set of DVs

Univariate results for total protective factors (initiative, self-control, attachment) revealed that all groups made good gains across the year, time $F(1, 1439) = 11.28, p = .001$, with no significant interactions with time (time-by-ethnicity $F(1, 1439) = .41, p = .52$; time-by-generation $F(2, 1439) = .36, p = .70$; time-by-ethnicity-by-generation $F(2, 1439) = 2.30, p = .10$). Additionally, the same between-subject effect of generation found in research question 1 remained, $F(2, 1439) = 3.35, p < .05$.

When examined separately within each ethnic group, the same pattern of 1st generation immigrant advantage in socio-emotional skills was seen within Latino children, group $F(2, 857) = 6.54, p < .05$, however generational differences in total protective factors did not appear in Black children, group $F(2, 582) = .71, p = .49$. Though a small cell size for 1st generation Black children ($n = 9$) may have made it difficult to reach significance, the generational group means did follow the same overall pattern of 1st generation immigrant advantage in total protective factors.

Univariate results for behavior concerns revealed that all groups were relatively stable across time, with no significant time effect, $F(1, 1439) = .42, p = .52$, and no significant interactions with time (time-by-ethnicity $F(1, 1439) = .42, p = .52$; time-by-generation $F(2, 1439) = 1.16, p = .31$; time-by-ethnicity-by-generation $F(2, 1439) = 2.26,$

$p = .11$). All generation-ethnicity groups were also similar in overall levels of behavior concerns across the year, ethnicity-by-generation $F(2, 1439) = .45, p = .70$. When generational groups were compared separately within each ethnic group, we found that Black children did not differ by generation in behavior concerns, group $F(2, 582) = 1.06, p = .35$. However, there were generational differences for Latino children, group $F(2, 857) = 7.78, p < .001$, although the pattern differed from the overall pattern in that instead of all three groups differing from each other, non-immigrants remained the group with the most behavior concerns while 1st and 2nd generation Latino immigrant children did not differ statistically from one another.

Research question 3: Variation in school readiness skills for immigrant children by region and country of origin. The next step was to go beyond the consideration of nativity status and ethnicity to include region and country of origin when examining the school readiness skills of just the 1st and 2nd generation immigrant children. Using the country of origin of the parent, the following regions for 1st and 2nd generation immigrant children were included in the analysis: South America ($n = 103$), Central America ($n = 188$), Cuba ($n = 452$), and Other Caribbean Islands ($n = 285$). We also examined country of origin with the following seven countries having large enough cell size representation ($n > 40$) to be included in the analyses: Cuba ($n = 452$), Haiti ($n = 165$), Puerto Rico ($n = 46$), Colombia ($n = 56$), Dominican Republic ($n = 50$), Nicaragua ($n = 126$), and Honduras ($n = 44$). Results for all analyses involving region or country of origin can be seen in more detail in Table 4.

Region of origin.

Pre-academic skills. Again, repeated measures ANOVAs were conducted for research question 3, the first set of which included region as the between-subjects factor, time (pre, post) as the repeated measure, and the pre-academic scales (cognitive, language, fine motor) as the set of DVs.

Univariate results for cognitive skills revealed that 1st and 2nd generation children from all regions of origin were making good and similar gains in cognitive skills across the year, (time $F(1,960) = 19.36$, $p < .001$; group-by-time interaction ns, $F(3, 960) = 1.80$, $p > .05$), but they differed with respect to mean levels of competence, between group $F(4, 960) = 3.60$, $p < .05$. Specifically, the cognitive scores of children whose parents have origins in South America (averaged across time $M = 47.1$) were higher than both children of parents of Cuban origins ($M = 39.9$) and children of parents with Central-American origins ($M = 39.0$). The mean for Caribbean children ($M = 42.5$) fell between that from South America and Cuba but was not different statistically from either region. The effect size between South American children and Central American children is $d = .31$.

The univariate results for language skills were similar to those for cognitive skills with children from all regions making good and similar gains across the year, significant time effect, $F(1,960) = 81.71$, $p < .001$, nonsignificant time-by-group interaction, $F(3, 960) = 1.82$, $p > .05$. However, there were differences in mean levels of language competence across regions, $F(3,960) = 4.94$, $p < .01$. Again, immigrant children with origins in South America ($M = 34.4$), Cuba ($M = 32.5$), and the Caribbean Islands ($M = 31.9$) all showed similar levels of language skills, but children from Central America

tended to be struggling in comparison ($M = 26.4$). The effect size between South American children and Central American children is $d = .33$.

In fine motor skills, univariate results similarly revealed a significant effect of time, $F(1, 960) = 27.72, p < .001$, and a non-significant time-by-region interaction, $F(3, 960) = 1.50, p > .05$. Children from different regions did differ, however in overall levels of fine motor skills, $F(3, 960) = 5.68, p = .001$, whereby children from South America ($M = 58.6$) demonstrated stronger fine motor skills than children from any other region, while children from non-Cuban Caribbean islands scored the lowest ($M = 47.6$) – significantly lower than South American and Cuban children ($M = 52.6$), who scored second highest in fine motor skills. The effect size between South American children and Caribbean children is $d = .39$.

Socio-emotional skills and behavior. The second set of repeated measures ANOVAs included region as the between-subject factor, time as the repeated measure, and the socio-emotional scales (total protective factors, behavior) as the set of DVs. Univariate results for the test show that time was significant for protective factors, $F(1, 659) = 13.72, p < .001$, but not for behavior concerns, $F(1, 659) = .43, p > .05$. The between-subjects effect for region was non-significant for both TPF, $F(3, 659) = 1.30, p > .05$, and behavior concerns, $F(3, 659) = 1.38, p > .05$. With a non-significant time-by-region interaction for both scales, this means that while children from all regions appear to be making good and similar gains in their protective factors over the year, they remain relatively stable in their level of behavior concerns.

Country of origin.

Pre-academic skills. The third set of ANOVAs for research question three investigates country of origin and its relationship to school readiness for immigrant children. These ANOVAs included country of origin as the between-subject factor, time as the repeated measure, and pre-academic skills (cognitive, language, fine motor) as the set of DVs.

In terms of cognitive skills, there were both main effects for time $F(1, 872) = 15.18, p < .001$, and for country, $F(6,872) = 3.37, p < .01$, but also a significant country-by-time interaction as is shown in Figure 7, $F(6,872) = 2.28, p < .05$. Children with family origins in Puerto Rico started the year showing the most cognitive competence but actually declined in terms of percentile rank over the year (time $d = -.15$). Comparatively, immigrant children from Honduras and the Dominican Republic appeared to be struggling the most with regard to cognitive skills at the beginning of the year, but Dominican-origin children made excellent gains across the year, and by Spring, showed similar levels of cognitive skills as the other six groups. Children from Haiti began the year in the middle of the pack with regard to cognitive skills, but made the greatest gains of the 7 groups across the year and by Spring, they showed the highest levels of cognitive skills of any immigrant group (time $d = .32$).

For language, there were also significant main effects for time, $F(1, 872) = 67.11, p < .001$, and country, $F(6, 872) = 3.70, p = .001$, and a significant interaction between country of origin and time, $F(6,872) = 2.34, p < .05$. Puerto Rican and Cuban children started the year more advanced in language skills than children from other countries, and

both groups made modest gains across the year. Puerto Rican children made the smallest language gains across the year (time $d = .15$). Children from Colombia and Haiti, on the other hand, began the year in the middle of the groups in terms of language competence, but made large gains across the year so that by Spring, they were scoring higher than all other groups. Colombian children made the greatest gains of the 7 groups (time $d = .75$). Immigrant children from Honduras and the Dominican Republic appear to be struggling the most with language, but Dominican-origin children made good gains and by the end of the year were more similar to other groups in language skills, while Honduran children still lagged behind.

Fine motor skills showed similar main effects for time, $F(1, 872) = 34.18$, $p < .001$, country, $F(6, 872) = 2.34$, $p < .05$, and a time-by-country interaction, $F(6, 872) = 2.25$, $p < .05$. Colombian children began the year high in fine motor skills and also made large gains across the year (time $d = .45$), putting them well ahead of other groups by the end of the year. Children from the Dominican Republic began the year second lowest in terms of fine motor skills, but made great gains across the year and finished second highest. Children from Cuba and Puerto Rico were relatively stable across the year in fine motor skills. Puerto Rican children had the smallest gains (time $d = .06$), while Cuban children performed slightly higher in terms of mean level across time points. Finally children from Nicaragua, Haiti, and Honduras made modest gains across the year, with Nicaraguan children performing quite well overall, and Honduran children lagging behind children from other countries.

Socio-emotional skills and behavior. The fourth and final set of repeated measures ANOVAs included country as the between-subject factor, time as the repeated measure, and the socio-emotional scales (total protective factors, behavior) as the set of DVs. Univariate results revealed that the time effect held for total protective factors, $F(1, 590) = 8.73$, but not behavior concerns, $F(1, 590) = .31$, $p > .05$. Further, there was no between-subjects effect for country and no time-by-country interaction for either protective factors, $F(6, 590) = 1.53$, $p > .05$, or behavior concerns, $F(6, 590) = 1.44$, $p > .05$. So as with region, regardless of country first- and second-generation immigrant children showed similarly high socio-emotional protective factors and low-behavior concerns when compared to non-immigrant children. Again, we see that heterogeneity by country of origin, ethnicity, and language background is the key to understanding immigrant children's school readiness before school entry and that simple comparisons of nativity group averaging across these factors are limited.

Research question 4: Grade school outcomes for children with different nativity histories and ethnic backgrounds.

Kindergarten school readiness. The first part of research question 4 asked how, based on nativity history and ethnicity, children performed on the School Readiness Uniform Screening System (SRUSS), a pair of assessments administered at the beginning of the kindergarten year. The first of those assessments was the Early Skills Inventory – Kindergarten (ESI-K), measuring language, cognition, and motor skills. Here a two-way ANOVA was performed with nativity status (1st generation, 2nd generation, non-immigrant) and ethnicity (Black, Latino) as the two IVs and total score on the ESI-K as

the DV. Results showed that all children performed similarly on this assessment ($M = 22.57$; $SD = 3.70$) as demonstrated by no significant main effect for nativity, $F(2, 2003) = .66$, $p > .05$ or ethnicity, $F(1, 2003) = 2.37$, $p > .05$, and no significant interaction, $F(2, 2003) = .67$, $p > .05$. Though some of the ESI-K scales have similar names as those that make up the LAPD pre-k measure (e.g. cognitive, motor), the two do not appear to be measuring those skills in the same way, and therefore should not be thought of as continuous measures of the same constructs over time. The LAPD is a comprehensive developmental assessment while the ESI-K is a more cursory school readiness screener. In fact, the two measures are only moderately correlated with one another ($r = .38$), and the ESI-K score accounts for only 14 percent of the variance in the LAPD. Therefore, it is difficult to say whether the children in the three nativity groups have actually converged in terms of school readiness skills, or whether the differences seen in the LAPD are simply not picked up by the more cursory ESI-K.

The second assessment comprising the SRUSS was the Dynamic Indicators of Basic Literacy Skills (DIBELS). To assess children's outcomes on this measure, a two-way MANOVA was conducted, again with nativity status and ethnicity as the two IVs and the two scales of the DIBELS (letter naming fluency, initial sounds fluency) as the set of DVs. Multivariate results indicated that at the beginning of the kindergarten year, children differed with regard to their basic literacy skills according to nativity status (significant group effect, $F(4, 3938) = 4.68$, $p = .001$) and according to ethnicity (significant group effect, $F(2, 1968) = 15.15$, $p < .001$). There was no significant nativity status-by-ethnicity interaction, $F(4, 3938) = 1.34$, $p > .05$. The main effect for nativity

status held for the initial sounds fluency scale, $F(2, 1969) = 8.39, p < .001$ ($d = .25$), but not for the letter naming scale, $F(2, 1969) = 1.96, p > .05$. Conversely, the main effect for ethnicity held for the letter naming scale, $F(1, 1969) = 21.32$ ($d = .58$), but not for the initial sounds scale $F(1, 1969) = .10, p > .05$. For the initial sounds scale, regardless of ethnicity, Fisher's LSD post hoc tests showed that non-immigrant children ($n = 969; M = 5.7$) were better able to identify and produce the initial sound of a word in English than were 1st generation ($n = 132; M = 4.7$) and 2nd generation immigrant children ($n = 874; M = 4.6$), who did not differ from each other. For the letter naming scale, it was Black children ($n = 770; M = 21.0$) who, regardless of nativity history, had a greater ability to name randomly arranged letters in English than did Latino children ($n = 1205; M = 11.6$) (see Figure 8).

The above results appear to suggest that the main effects found for nativity status and ethnicity could actually be due to differences in English language proficiency, because we see that immigrants and Latinos perform more poorly on this measure of English literacy skills. To investigate this potential language effect, I reran the analyses to account for English language proficiency. The first analysis involved selecting only Latino children and testing for an interaction between nativity status and English proficiency. Using this approach, it did appear that language proficiency was the main influence on DIBELS scores, evidenced by significant main effects of English-proficiency for both initial sound fluency, $F(1, 927) = 22.17, p < .001$, and letter naming, $F(1, 927) = 34.35, p < .001$, with non-significant effects for nativity status and the interaction term for both scales. The second analysis selected only English proficient

Latino children, and again found no differences between the nativity groups, for either initial sound $F(2, 394) = .15, p > .05$, or letter naming, $F(2, 394) = .21, p < .05$.

Therefore, there is no unique effect of nativity status on English literacy skills. What matter most, understandably, is English language proficiency.

Early academic performance. The second part of research question 4 concerned whether and how nativity status and ethnicity might influence children's grades as they progress through the early years of school. As such, three two-way ANOVAs were conducted with nativity status and ethnicity as the IVs and end of year grades (kindergarten, 1st grade, 2nd grade), as the DVs. Due to meaningful differences in grading scale from kindergarten to 1st grade, the data were not particularly amenable to a repeated measures design. Results on kindergarten grades (1 = Unsatisfactory; 2 = Satisfactory; 3 = Excellent) show that there was a marginally significant main effect for generation, $F(2, 1878) = 12.52, p = .07$, whereby 1st generation immigrant children ($n = 119; M = 2.39$) were graded higher by teachers than 2nd generation immigrant children ($n = 830; M = 2.27$), who in turn were graded higher than non-immigrant children ($n = 935; M = 2.22$) (see Figure 9). The size of the effect between 1st generation and non-immigrant children is $d = .44$. There was no significant main effect for ethnicity, $F(1, 1878) = .95, p > .05$, and no significant interaction, $F(1, 1878) = .28, p > .05$.

The ANOVA on 1st grade grades (range = 1(F) – 5(A)) did not return any significant results, however, the means followed those for kindergarten grades. Extremely small cell sizes for Black, 1st generation children ($n = 8$), greatly reduced the power of the test (.31 for the nativity effect; .35 for the ethnicity effect). Therefore, the analysis was

redone as a 2 x 2 ANOVA, collapsing the 1st and 2nd generation children into a single group. This created the contrast of children with immigrant parents vs. children with native-born parents, improving the power of the test to more acceptable levels (.79 for the nativity effect; .85 for the ethnicity effect). Results of the 2 x 2 ANOVA, shown in Figure 10, revealed a significant main effect for the 2-level nativity status variable, $F(1, 1798) = 255.12, p < .05$ ($d = .16$), whereby children with immigrant parents were gaining higher grades ($n = 925; M = 4.15$) than children with native-born parents ($n = 877; M = 4.04$). There was also a significant main effect for ethnicity, $F(1, 1798) = 340.36, p < .05$ showing that Latino children ($n = 1089, M = 4.15$), regardless of nativity status, received higher grades in 1st grade than Black children ($n = 713, M = 4.03$). The interaction between nativity status and ethnicity was non-significant, $F(1, 1798) = .02, p > .05$.

Finally, a similar 3(nativity) x 2(ethnicity) ANOVA was conducted on 2nd grade grades. Here, there was a significant main effect of ethnicity, $F(1, 1562) = 6.79, p < .05$, and a significant nativity-by-ethnicity interaction, $F(2, 1562) = 4.55, p = .01$ (see Figure 11). It appears that by 2nd grade, 1st generation immigrant Black children are struggling slightly in comparison to non-immigrants, with 2nd generation Black immigrant children gaining the highest grades among Black children. For Latino children, however, 1st generation immigrants are performing better than both 2nd generation and non-immigrants, who are comparable in terms of overall grades in 2nd grade.

DISCUSSION

Immigrant children are extremely diverse in terms of language, skin color, religion, culture, and national origins, and this diversity has been shown to translate into variation in educational outcomes for different groups (Crosnoe, 2007; Garcia Coll et al., 1996; Magnuson et al., 2006). The first step in solving this puzzle, and closing the achievement gaps between children of varying national and ethnic backgrounds, is to start early and focus on how these children are doing before entering formal schooling. Once we have a good understanding of overall patterns of school readiness, we can begin to identify the familial, cultural, or socio-historical processes involved in creating these educational disparities, and be more prepared to develop and implement policy and practice that give all children an equal chance to succeed.

A major goal of this study was to investigate whether the same heterogeneity of educational outcomes found among older immigrant youth (according to factors like generation, ethnicity, and country of origin) would be found in the school readiness outcomes of a sample of ethnically-diverse, low-income preschool children. A second goal was to determine whether there was evidence of the immigrant paradox, or the finding that overall, 1st generation immigrant children demonstrate advantages in educational domains when compared to 2nd generation and non-immigrant children, and whether these advantages appear to diminish with successive generations.

With regard to the first goal, we find that even at the preschool age, children differ in a number of important ways according to family immigration history, generation, ethnicity, and national origins. Though the entire sample is low-income and all these families likely face a number of challenges, non-immigrant children tended to be more disadvantaged in terms of family socio-economic factors than either 1st generation or 2nd generation immigrant children. Their parents were the youngest, least educated, and least likely to be married. The two groups of immigrant children on the other hand, had a few comparative advantages that could translate into additional resources available to the child. For instance, parents of 1st generation immigrant parents were most likely of the three groups to hold a high school diploma and to be married, and parents of 2nd generation children had a slightly higher income than either of the other two groups.

There was also substantial heterogeneity in terms of school readiness outcomes, mirroring work on the academic outcomes of older immigrant youth (Fuligni, 1997; Hao & Bonstead-Bruns, 1998; Kao & Tienda, 1995; Leventhal et al., 2006; Portes & Zady, 1996). I first asked whether school readiness varies for children with different nativity histories and found that indeed it does. The general pattern emerged that non-immigrant children tended to have advantages over immigrant children in pre-academic areas (cognitive, language) while immigrant children had relative advantages in socio-emotional areas (protective factors, behavior). These effects were small to medium according to Cohen (1988), and the smallest effect was demonstrated for cognitive skills while the largest effect was demonstrated for behavior concerns.

For some of the school readiness domains, the effects of nativity status depended on children's ethnicity. For example, although small cell sizes for Black 1st generation immigrants made reaching statistical significance for an interaction difficult, there were different generational patterns for Black and Latino children in both cognitive and language skills. For both domains, it appeared Black non-immigrant children had an advantage over both Black 1st and 2nd generation immigrant children. However for Latino children, 1st generation immigrants and non-immigrants performed similarly while it was 2nd generation immigrants who lagged behind.

There were also differences in cognitive and language skills according to national origins, whereby South American immigrant children showed the strongest skills and Central American immigrant children tended to be struggling, especially those from Honduras. Effects were small to medium for region and medium to large for country. This suggests that it is more useful to attend to a child's specific country of origin and to consider the socio-historical circumstances particular to that country that might affect pre-academic development, rather than generalizing across children from the same region of the world. There was also evidence that children not only had different overall levels of pre-academic skills according to country of origin, but that they also made different sized gains across the school year. The largest disparity in gains across countries was seen in the area of language skills. In the areas of socio-emotional protective factors and behavior concerns, generation seemed to matter more for Latino children than it did for Black children. For Latino children, 1st generation immigrant children showed greater protective factors than both 2nd generation children and non-immigrant children, and 1st

and 2nd generation children both displayed fewer behavior concerns than non-immigrant children. For children who are Black, however, there were no significant differences according to generation in either total protective factors or behavior concerns. Further, unlike with cognitive and language skills, national origins did not seem to matter as much for socio-emotional skills and behavior. First and second generation immigrant children displayed more protective factors and fewer behavior concerns than non-immigrant children regardless of from where their family migrated. Thus, perhaps there is something more universal about the immigration experience that helps young immigrant children attain stronger socio-emotional skills in preschool that doesn't seem to be related to country of origin. It could be a selection factor that parents who choose to migrate might have already had children who are more socio-emotionally skilled before the change of residence, or there could be something about the immigration experience and the hardships and joys that come with it, that lead young immigrating children to develop stronger social skills. Future research will have to explore these hypotheses in more detail.

Another interesting finding was that 1st generation Latino children, if they were strong in their native language (Spanish) and were assessed in their native language, did quite well among the other groups in general linguistic competency. Since parents of 1st generation children in our sample have higher levels of education and are more likely to be married than 2nd generation and non-immigrant children, they may be able to provide more in terms of social capital and resources, contributing in positive ways to their children's language development. On the other hand, 2nd generation and non-immigrant

children tend to do better if they take their assessments in English. For them, knowing English appears to be beneficial for overall language development.

One potential explanation for this language effect could involve a relationship between the English language proficiency of 2nd generation immigrant children and the acculturation of their parents. Although we don't have data on the age parents migrated, it is possible that for a 2nd generation immigrant child to be stronger in English and thus take the assessment in English, this could mean he/she has parents who are more acculturated perhaps because they migrated at a younger age, speak more English at home, and are more familiar with the U.S. education system and parenting interactions that prepare children for language and literacy in Western schooling (see Rogoff, 2003). On the other hand if a 2nd generation immigrant child is stronger in Spanish it may be related to having parents who are less acculturated, migrated more recently (even within the last 5 years), speak more Spanish at home, and are less familiar with the U.S. education system and parenting strategies that promote the kinds of (English) language and literacy skills helpful for Western schooling. Alternatively, the low language performance in general (regardless of language of assessment) for 2nd generation immigrants could indicate that the language input the child is receiving in both English and Spanish is limited and constraining their language development. For example, 2nd generation children's home language may not be supported to a great extent at school, making it difficult to develop strong skills in either language. Clearly, further research on how the home language and literacy environments differ between 1st and 2nd generation

immigrant children is needed and may shed more light on language patterns such as those found here.

Once these children enter formal schooling in kindergarten, they are in a new context with new demands and expectations and the base of skills they bring with them from preschool begins to influence their early school trajectories. It is notable and encouraging that there did not appear to be nativity or ethnicity differences on a school readiness screener measuring cognitive, language, and motor skills at the beginning of the kindergarten year, especially considering the disadvantage associated with immigrant status that was observed the year before. Differences in early literacy skills were apparent with non-immigrants having advantages over both immigrant groups in recognizing sounds and Black children doing better than Latino children at identifying printed letters. However, both these effects were accounted for by differences between groups in English-language proficiency. Non-immigrants were more likely to be English-proficient (and take their assessment in English) than either immigrant group overall, and Black children were more likely to be English proficient (and take their assessment in English) than Latino children overall.

By the end of kindergarten and 1st grade, we start to see that not only are immigrant children keeping up with non-immigrant children, they are receiving higher grades, with a slight advantage for 1st generation immigrant children, and effect sizes of a small to medium magnitude. We also find that by 1st grade, Latino children are outperforming Black children, and by 2nd grade, the 1st generation immigrant advantage begins to apply to Latino, but not Black, children. So overall in grade school, we find

some advantages for Black non-immigrant children in terms of early literacy skills, but otherwise Black children in general tend to be struggling when compared to Latino children. Also, 1st generation children appear to be doing quite well academically – better than both other nativity groups – and especially 1st generation Latino children. This is quite exceptional given the inevitable language barriers faced by recent Latino immigrants. However, we must acknowledge the uniqueness of the Miami community. The Latino immigrant advantage could very well be related to a large Latino population, increased social capital, greater resources, and Spanish language accommodations experienced by Latino Miami residents.

Another goal of this study was to explore whether the immigrant paradox might be present in these young children. The main questions are whether 1st generation immigrant children have any advantages over 2nd generation immigrant children in terms of school readiness and early academic outcomes, and if so, whether these advantages for immigrant children show declines over time. In preschool, first generation immigrants did show advantages over their second generation counterparts, for instance, in language skills regardless of whether one looked at the overall sample, at Latino children only, or separately for children who were assessed in English or Spanish. The 1st generation advantage was especially true for socio-emotional protective factors and behavior, for which regardless of region or country of origin, teachers rated 1st generation immigrant children as strongest of the three groups in these areas. These findings are similar to those by Crosnoe (2006, 2007) where Mexican immigrant children showed fewer externalizing behavior problems and more emotional competence and maturity when

compared to their non-immigrant peers. Considering kindergarten teachers often place more importance on social skills and behavior for success in kindergarten than on academic skills (Heaviside et al., 1993; Lin et al., 2003; West et al., 1995), the strong initiative, self-control, attachment, and good behavior of immigrant children could be a valuable asset to build upon when they enter kindergarten. If kindergarten teachers are aware of and can leverage these skills in immigrant children, then it is possible that socio-emotional strengths could serve as a “bootstrapping” mechanism by which immigrant children can raise their level of skills in academic domains, perhaps through enhanced teacher-child and child-child interactions in the context of learning. In fact, first generation immigrants did prove to have advantages over second generation immigrants in kindergarten grades, and in 2nd grade grades if they were Latino. Future analyses will test whether these early academic advantages can in any way be attributed to the competent social skills and behavior of immigrant children.

Overall, 1st generation immigrant children do tend to have an advantage over their 2nd generation counterparts in several domains considered important for school readiness, and in some cases in early academic performance in the first three years of formal schooling. Though academic outcomes for later years would provide us with a more detailed picture, the initial pattern suggests that the immigrant advantage does exist. However, results from this sample indicate the immigrant advantage may be more appropriate for describing low-income Latino than Black children’s early academic outcomes. Further, the decline over time in outcomes for recent immigrant children does not appear to apply to Latino children, at least not those in Miami and for the first few

years of schooling. They do well and continue to do well into 2nd grade. The pattern is more questionable for Black children, however, for whom being a recent immigrant does not appear to carry the same advantages as it does for Latino children.

Finally, the provision of quality early childhood education programs is seen by many as an important policy strategy for improving the school readiness and academic trajectories of children in poverty, immigrant or not, and for reducing the achievement gap (August & Hakuta, 1997; Brooks-Gunn & Duncan, 1997; Entwisle & Alexander, 1993; Takanishi, 2004; Zill, 1999). Overall the percentile ranking of children in this low-income, high-risk sample is quite low, sometimes alarmingly so (as in language skills), and it is imperative that we respond with policies that can help offset these children's educational risks. Results from the Miami School Readiness Project so far (Winsler et al., 2008), and those presented here, suggest that immigrant and nonimmigrant children who attend even garden variety early childhood childcare and pre-k programs make considerable progress in multiple domains of school readiness during their 4-yr-old pre-k year. The fact that there were no nativity group-by-time interactions found here suggests that such early care and education experiences likely benefit both immigrant and non-immigrant children equally.

As pointed out by Crosnoe (2007) and discussed earlier, good quality childcare and early education programs for young immigrant children are a worthy investment, especially if they can build on and not jeopardize the existing socio-emotional and behavioral strengths of young immigrant children. Evidence from our study in Miami suggests that immigrant children's social skills only increased over the course of the year

in childcare and children's behavior problems as reported by teachers certainly did not increase over time. Thus, it would appear that early childhood programs have much potential for improving the health and welfare of a diversity of immigrant families. However, as we found in our study, substantial nativity group differences are already being observed at age four in the pre-academic skills considered important for kindergarten before young immigrant children even get to school. The situation thus perhaps calls for early intervention and preschool curricula to be more targeted to fulfill the unique issues and needs faced by diverse groups of immigrant and non-immigrant preschoolers.

Limitations. Recently, statistical analyses have evolved to be capable of accounting for complex, real world influences. One of these complexities involves nesting, or a hierarchical structure that is common in educational data sets, adding an additional source of variance. For example, children in the current study are nested within centers, and therefore share a common context that could make their outcomes more similar to each other than to children from other centers. Because of this nested structure, the ideal data analysis strategy would use hierarchical linear modeling, and because this was not done, this is a limitation of the present study.

Another limitation, given the theoretical interest in ethnicity as a moderator of nativity status, is the rather crude self-report measure of race/ethnicity that was available. The race/ethnicity variable we received was a 5-level variable that included the categories "white," "Hispanic/Latino," African American/Black," Asian/Pacific Islander," and "Other." Therefore, it was impossible to tell how parents would have responded if they

identified their child as both Hispanic and White or both Hispanic and Black – two quite possible combinations given the diversity of nationalities represented in the sample. A more helpful categorization would be one that first determined Hispanic/Latino origin and then inquired about race/skin color, as was done in the 2000 census.

Finally, because an experimental design was not possible, and participation in the subsidy program was voluntary, there could be selection bias inherent in the sample that affects the results in unknown ways. Additionally, the national and ethnic backgrounds of the children in the sample were limited to those common in Miami, Florida, and not representative of all immigrants. For instance, there were no Asian immigrants in our sample, and very few White immigrants. We therefore were only able to fully investigate nativity patterns within Black and Latino immigrant and non-immigrant children. Despite these limitations, however, this data set provided the opportunity to examine how prepared large groups of low-income children were for kindergarten, and how family immigration history might be related to school readiness. Now that we have a descriptive picture of these children's developmental competencies, future research with this data set can begin to investigate some mechanisms for group differences and change over time.

APPENDIX A: TABLES

Table 1

*Sample Sizes According to Ethnicity and Nativity Status**

	1st Generation	2 nd Generation	Non-Immigrant	Total
Black	13	195	597	805
Latino	136	769	402	1307
White	4	17	57	78
Total	153	981	1056	2190

* 4 children were of unknown ethnicity and are not included in this table.

Table 2

Nativity Group Differences on Child and Family Characteristics

	Non-Immigrant (n = 1059)	1 st Generation (n = 153)	2 nd Generation (n = 982)	Overall (n = 2194)
<i>Child</i>				
Age in months ^{a,c}				
<i>M</i>	53.5	54.3	53.7	53.6
<i>SD</i>	3.5	3.7	3.6	3.5
% Male	51.9	53.6	52.4	52.3
Ethnicity [*]				
% Latino	38.1	88.9	78.4	59.7
% Black	56.5	8.5	19.9	36.8
% White	5.4	2.6	1.7	3.6
% English proficient [*]	81.5	21.6	34.6	56.5
Type of care [*]				
% center-based care	71.1	84.3	82.2	77.0
% family day/ informal care	10.6	8.5	9.7	10.0
% public school pre-	18.3	7.2	8.1	13.0
<i>Family</i>				
Parent income ^b				
<i>M</i>	\$16,690	\$16,630	\$17,640	\$17,110
<i>SD</i>	\$7,310	\$7,460	\$7,150	\$7,260
Family size ^{a,b,c}				
<i>M</i>	3.6	3.0	3.2	3.4

<i>SD</i>	1.2	1.0	1.1	1.2
% Parents with H.S diploma or above ^{a,b,c}	83.8	89.5	80.5	82.7
Parent age ^{a,b}				
<i>M</i>	29.4	32.8	33.4	31.4
<i>SD</i>	6.7	6.6	6.6	6.9
% Parents married [*]	3.0	31.4	10.1	8.2
Parent language [*]				
% English	79.5	4.6	13.8	44.9
% Spanish	19.5	90.8	73.9	48.8
% Creole	1.0	4.6	12.2	6.3

a Statistically significant difference between non-immigrants and 1st generation immigrants.

b Statistically significant difference between non-immigrants and 2nd generation immigrants.

c Statistically significant difference between 1st generation and 2nd generation immigrants.

* Difference between groups as determined by Chi-Square test significant at the $p < .05$ level.

Table 3

School Readiness Percentile Scores at Pre and Post for Each Nativity Group

Assessment Scales	Non-Immigrant (n = 105)		1 st Generation (n = 153)		2 nd Generation (n = 982)		Total (2,194)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Cognitive ^{a,b}								
<i>M</i>	44.7	51.3	40.9	45.1	39.0	43.9	41.9	47.6
<i>SD</i>	28.4	28.4	27.4	25.5	26.1	27.0	27.5	27.8
Language ^{a,b,c}								
<i>M</i>	35.0	46.4	31.0	39.7	26.3	35.4	30.8	41.0
<i>SD</i>	26.9	29.2	24.7	27.1	22.5	26.7	25.2	28.4
Total Protective Factors ^{a,c}								
<i>M</i>	49.7	55.8	59.2	65.9	52.1	58.2	51.3	57.5
<i>SD</i>	28.2	29.4	25.4	26.5	27.4	28.4	27.8	28.9
Behavior ^{a,b,c}								
<i>M</i>	57.8	56.9	46.0	45.9	52.5	51.5	54.8	53.9
<i>SD</i>	29.2	28.3	30.0	28.7	28.1	29.3	29.0	29.0

a Statistically significant difference between non-immigrants and 1st generation immigrants.

b Statistically significant difference between non-immigrants and 2nd generation immigrants.

c Statistically significant difference between 1st generation and 2nd generation immigrants.

Table 4

School Readiness Percentile Scores at Pre and Post for each Region and Country

	Cognitive*		Language*		TPF		Behavior	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
<i>Region of Origin</i>								
Caribbean Islands (n = 263)								
<i>M</i>	39.2 _a	46.7	26.0 _a	38.2	53.0	55.8	55.9	51.6
<i>SD</i>	27.4	28.8	23.7	27.8	29.4	30.8	29.3	30.7
Central America (n = 184)								
<i>M</i>	38.0 _a	40.3	22.7 _b	30.0	49.3	56.8	50.4	49.3
<i>SD</i>	27.0	25.0	21.0	24.6	28.0	27.9	28.1	26.6
Cuba (n = 426)								
<i>M</i>	37.9 _a	42.4	28.7 _a	36.3	52.5	59.6	52.0	51.8
<i>SD</i>	24.9	26.0	22.3	26.5	25.3	27.2	27.8	30.2
South America (n = 99)								
<i>M</i>	45.8 _b	48.4	29.3 _a	39.5	59.7	60.7	45.7	47.9
<i>SD</i>	26.7	25.5	23.2	27.4	26.9	28.0	27.2	27.8
<i>Country of Origin</i>								
Colombia (n = 55)								
<i>M</i>	40.8 _a	46.7	24.2 _a	41.8	58.7	60.5	43.6	44.0
<i>SD</i>	26.5	26.6	19.4	26.6	29.4	31.7	32.6	28.7
Cuba (n = 426)								
<i>M</i>	37.9 _{a,b,c}	42.4	28.7 _a	36.3	52.5	59.6	52.0	51.8
<i>SD</i>	24.9	26.0	22.3	26.5	25.3	27.2	27.8	30.2
Dominican Republic (n = 46)								
<i>M</i>	29.0 _{b,c,d}	40.4	19.2 _{b,c}	32.1	43.8	47.3	59.0	59.7
<i>SD</i>	24.8	25.9	20.6	26.8	29.8	31.1	29.6	31.9
Haiti (n = 152)								

<i>M</i>	39.4 _a	48.5	25.2 _a	39.4	55.7	56.0	58.6	50.5
<i>SD</i>	26.9	28.6	23.3	28.2	29.1	30.4	29.3	29.5
Honduras (n = 44)								
<i>M</i>	27.7 _{c,d}	31.6	17.3 _{b,c}	25.5	53.9	55.0	47.2	47.5
<i>SD</i>	23.0	21.9	15.4	21.6	27.0	29.8	28.9	22.9
Nicaragua (n = 122)								
<i>M</i>	40.3 _{a,b,c}	42.9	22.9 _b	31.1	47.7	57.4	51.8	50.7
<i>SD</i>	26.9	25.0	20.2	24.9	29.8	25.9	29.0	27.7
Puerto Rico (n = 42)								
<i>M</i>	48.8 _a	44.1	30.9 _{a,b}	34.8	53.2	61.2	45.4	47.2
<i>SD</i>	28.9	32.8	25.9	25.7	28.6	32.9	27.5	33.7

Note. Means having the same subscript are not significantly different at the $p < .05$ in the Fisher's least significant difference comparison. Subscripts on Pre means indicate group differences averaged across both time points.

*Difference between groups as determined by mixed ANOVA significant, $p < .05$ for both the analysis by region and by country.

APPENDIX B: FIGURES

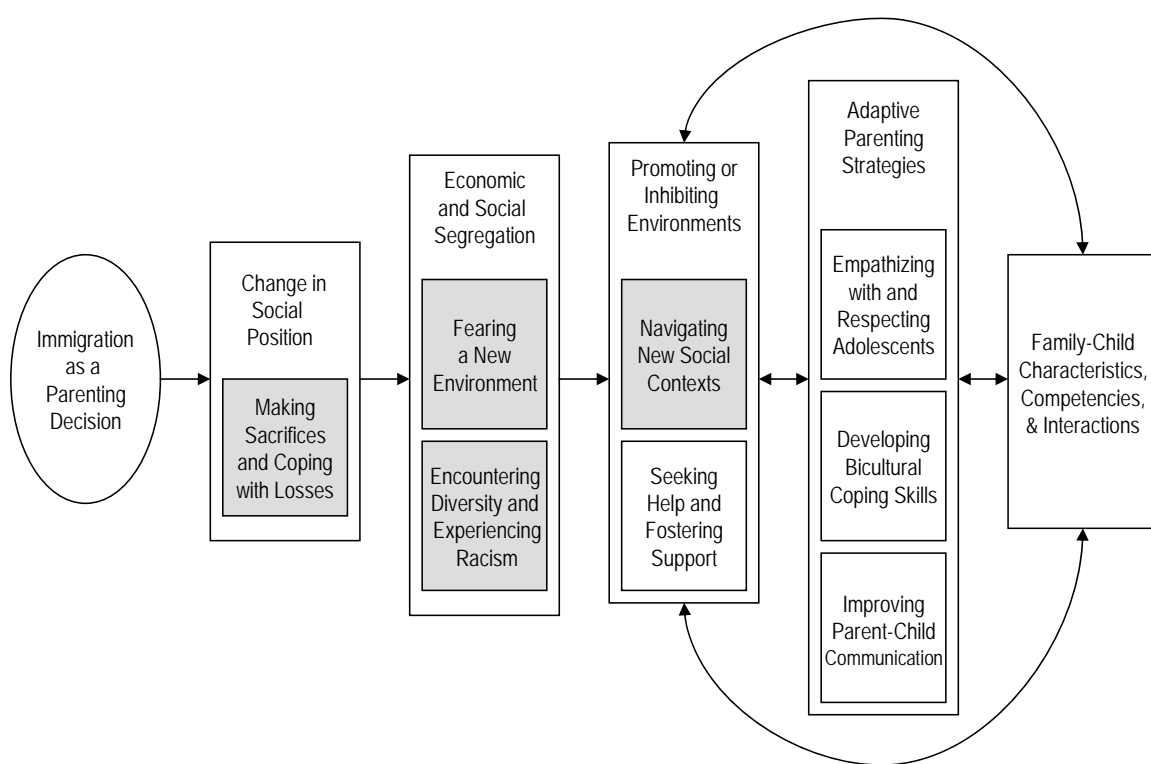


Figure 1

Becoming an American Parent: A Risk-Resiliency Framework for Latino Immigrants

Source: Perreira et al. (2006) as adapted from Garcia-Coll et al. (1996).

Note: Challenges and risks reported by immigrant parents are shaded in gray. Protective factors that promote resilience are not shaded.

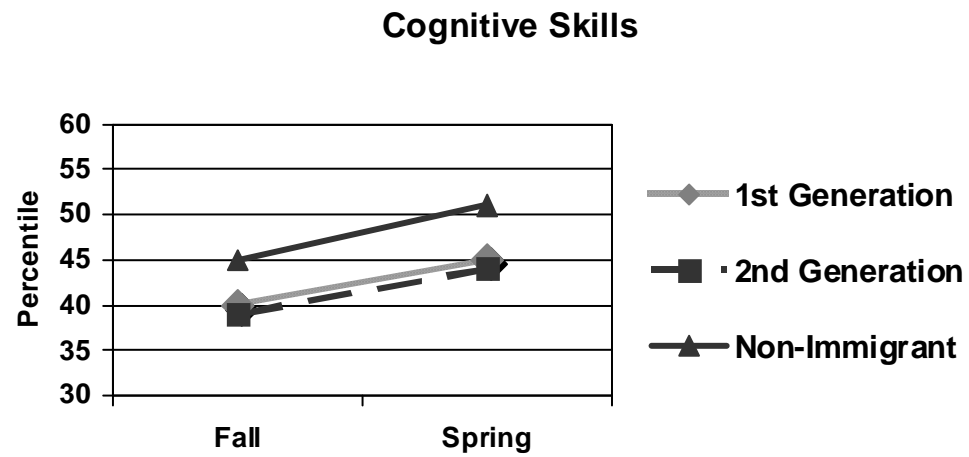


Figure 2: Cognitive percentile scores for each of the three nativity groups

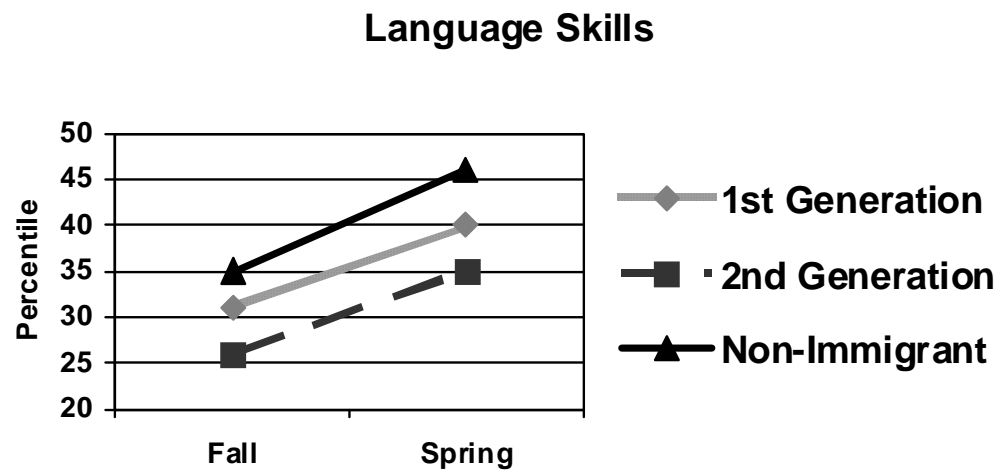


Figure 3: Language percentile scores for each of the three nativity groups

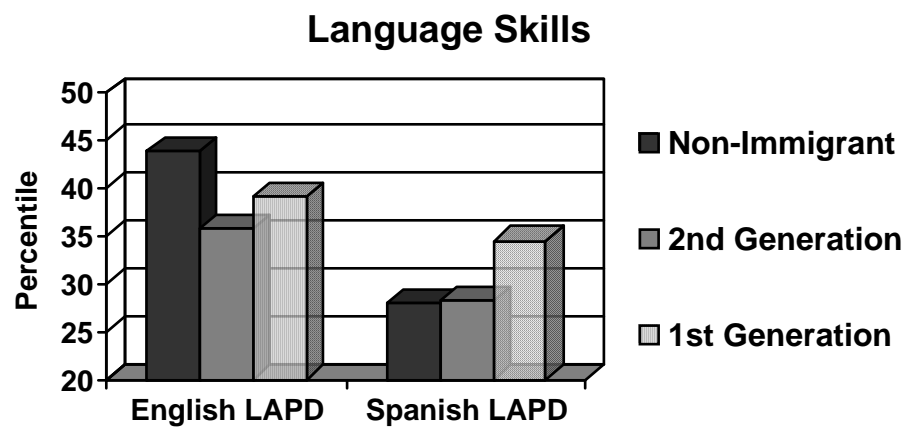


Figure 4: Language percentile scores for Latino children by language of assessment

Total Protective Factors

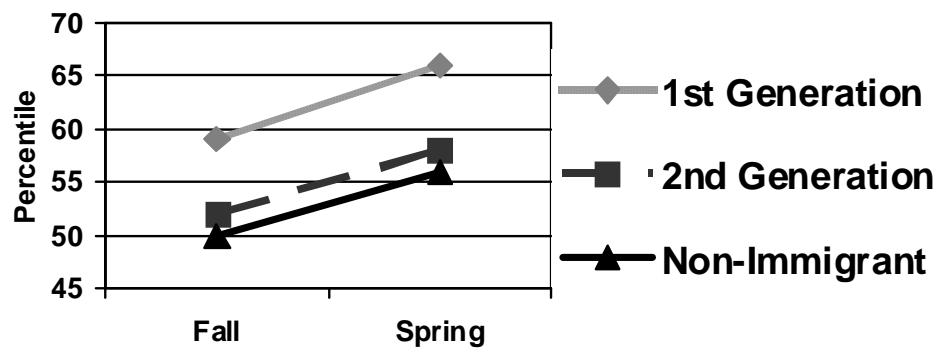


Figure 5: TPF percentile scores for each of the three nativity groups

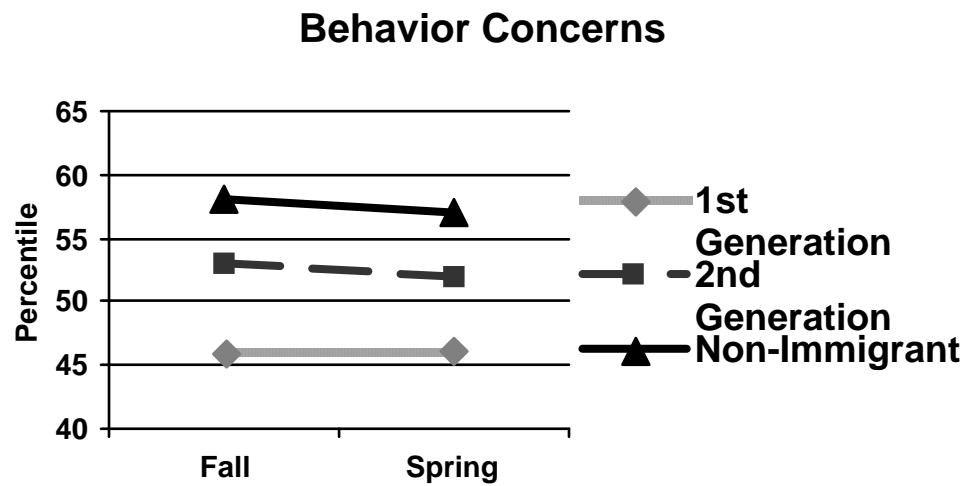


Figure 6: Behavior concerns percentile scores for each of the three nativity groups

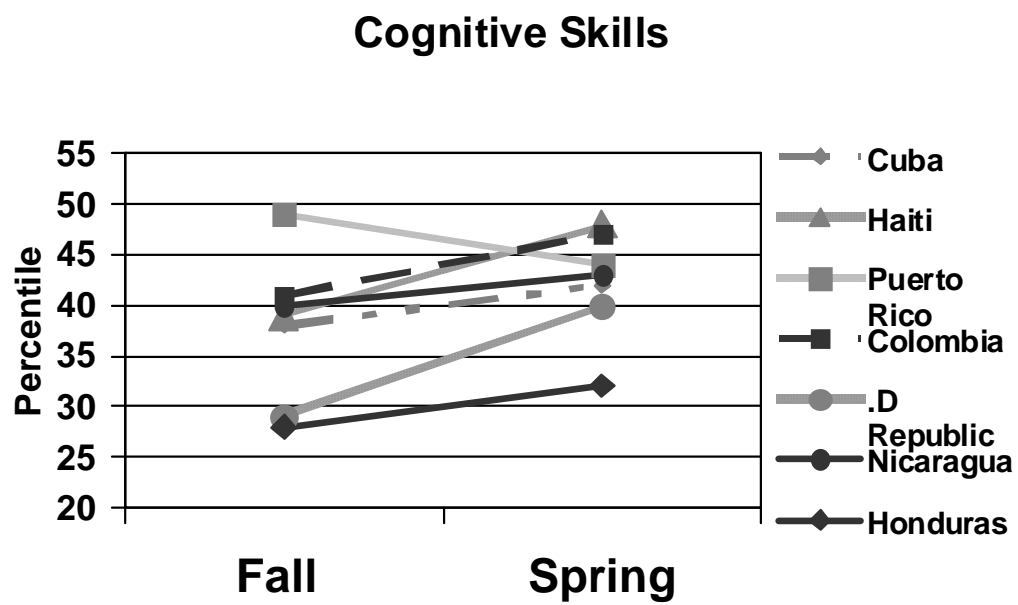


Figure 7: Cognitive percentile scores for immigrant children of different national origins

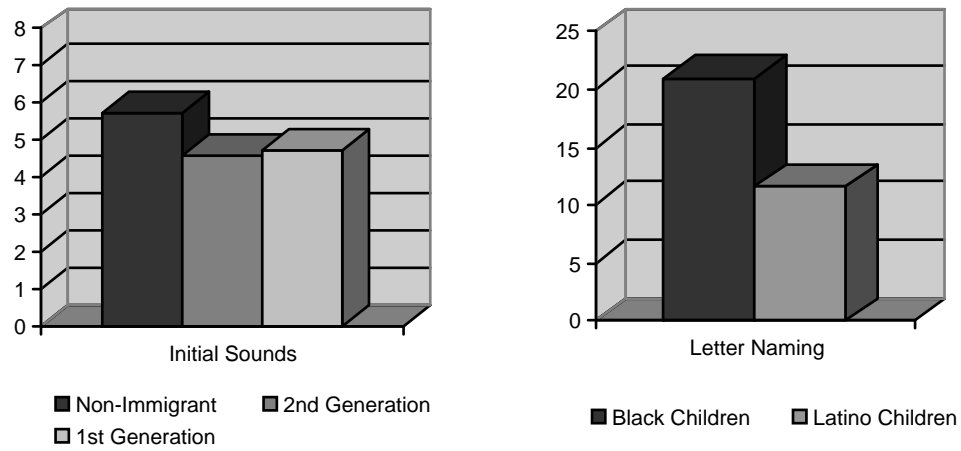


Figure 8: Nativity and Ethnic Differences on the DIBELS Literacy Assessment in Kindergarten

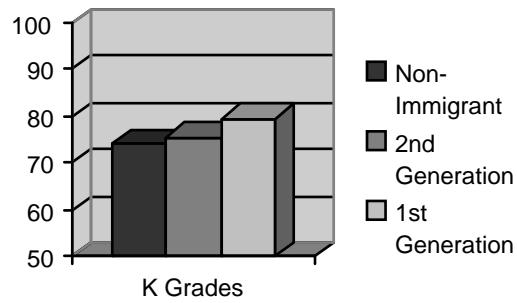


Figure 9: Nativity Differences in Kindergarten Grades (Percent of Total Possible)

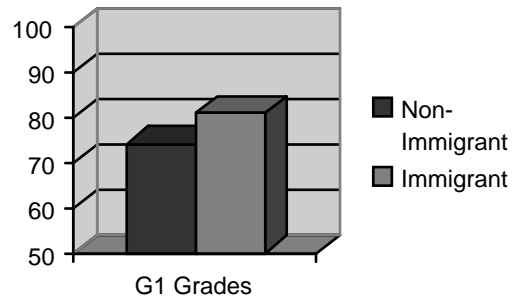


Figure 10: Nativity Differences in 1st Grade Grades
(Percent of Total Possible)

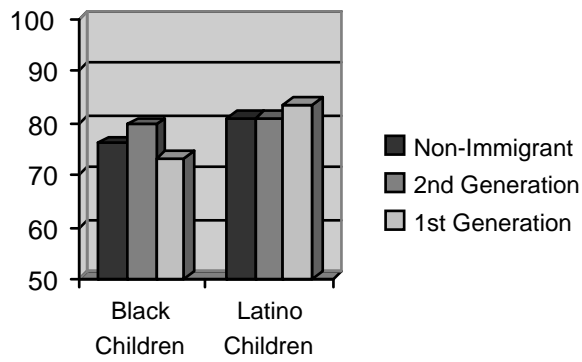


Figure 11: Nativity by Ethnicity Interaction for 2nd Grade Grades
(Percent of Total Possible)

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CURRICULUM VITAE

Jessica Johnson De Feyter was born in Fairfax, Virginia to an American father and Brazilian immigrant mother. She became interested in culture and its intersection with psychology and education during her undergraduate studies at the University of California Santa Cruz. This experience, along with a long-time interest in applied early childhood development, motivated Ms. De Feyter's investigation into early educational outcomes for young immigrant children.