Mothers' Investments in Child Health in the U.S. and U.K.: A Comparative Lens on the Immigrant 'Paradox'

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Abstract
Research on the "immigrant paradox"—healthier behaviors and outcomes among more socioeconomically disadvantaged immigrants—is mostly limited to the U.S. Hispanic population and to the study of birth outcomes. Using data from the Fragile Families Study and the Millennium Cohort Study, we expand our understanding of this phenomenon in several ways. First, we examine whether the healthier behaviors of Hispanic immigrant mothers extend to other foreign-born groups, including non-Hispanic immigrant mothers in the U.S. and white, South Asian, black African and Caribbean, and other (largely East Asian) immigrants in the U.K, including higher SES groups. Second, we consider not only the size of the paradox at the time of the child's birth, but also the degree of its persistence into early childhood. Third, we examine whether nativity disparities are weaker in the U.K., where a much stronger welfare state makes health information and care more readily accessible. Finally, we examine whether differences in mothers' instrumental and social support both inside and out of the home can explain healthier behaviors among the foreign-born. The results suggest that healthier behaviors among immigrants are not limited to Hispanics or to low SES groups; that nativity differences are fairly persistent over time; that the immigrant advantage is equally strong in both countries; and that the composition and strength of mothers' support plays a trivial explanatory role in both countries. These findings lead us to speculate that what underlies nativity differences in mothers' health behaviors may be a strong parenting investment on the part of immigrants.

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INTRODUCTION

Immigrants' ability to move up the socioeconomic ladder in their host countries—that is, their degree of socioeconomic incorporation—is of long-standing interest to migration scholars and policymakers (Chiswick 1978; Massey 1981; Tubergen, Maas and Flap 2004). This interest will only increase, given the large and growing presence of foreign-born individuals and families in many countries: over 13% of the U.S. population is foreign-born, for example, and about 25% of children and adolescents are either foreign-born or have at least one parent born abroad. To date, most of the sociological literature on immigrant incorporation has focused on adults' socioeconomic outcomes (e.g., Van Tubergen, Maas and Flap 2004) and children's linguistic and academic development (e.g., Fuligni and Witgow 2004; White and Glick 2009), with much less attention given to the role of health. This is an important oversight, in light of research showing that child health is a strong predictor of educational achievement and eventual socioeconomic success (Currie 2006: Jackson, forthcoming; Palloni 2006).

Ironically, health is an area in which immigrants may have an advantage over the native-born population, at least in certain domains. Research on birth outcomes in the United States, for example, indicates that babies born to Hispanic immigrant mothers are more likely to have a normal birth weight and less likely to die in infancy than babies born to native-born mothers (Landale, Oropesa and Gorman 2000). This advantage exists despite the below-average socioeconomic status and poorer living conditions of these mothers, presenting a "paradox" for researchers and policymakers who seek to understand the relationship between socioeconomic status and health. In particular, the foreign-born health advantage is often framed as a *Hispanic* paradox reflecting something unique about the migration decisions and/or cultural practices of families from Latin

America (e.g., Landale, Oropesa and Gorman 2000; Palloni and Arias 2004). The predominant focus on Hispanics raises questions about whether the paradox is unique to Hispanics' migration and social behavior, or if in fact it is a more general phenomenon that extends across cultures and socioeconomic groups. Furthermore, the paucity of rigorous, longitudinal research on the health behavior of immigrant families and children makes it difficult to know whether health advantages persist beyond birth, as immigrant mothers adapt to their host country. In this study we use data from two national birth cohort surveys, the American Fragile Families Study (FFS) and the U.K. Millennium Cohort Study (MCS), to address several questions about the prevalence of the paradox in new mothers' health behavior and the mechanisms that lie behind this phenomenon. First, we ask whether the healthier behaviors of Hispanic immigrant mothers extend to other foreign-born groups, including non-Hispanic immigrant mothers in the U.S. and white, South Asian, black African and Caribbean, and other (largely East Asian) immigrants in the U.K., including higher SES groups. Second, we consider not only the size of the paradox at the time of the child's birth, but also the degree of its persistence into early childhood. Finally, we examine whether differences in mothers' instrumental and social support both inside and out of the home can explain healthier behaviors among the foreign-born. The fact that Hispanic families appear to be especially strong, both in terms of family structure (Landale, Oropesa and Bradatan 2006) and ethnic enclaves (Wilson and Portes 1980) suggests that some of the immigrant advantage may be due to these parents' greater access to instrumental and social support. Unfortunately, very little empirical research has examined whether differences in family structure and social support account for native-immigrant differences in maternal health behavior and birth outcomes.

Studying these questions in two different settings—the U.S. and the U.K.—has several advantages. The very different composition of the foreign-born British and American populations

allows us to examine the extent to which the paradox of healthier behavior among foreign-born mothers is unique to the Hispanic population in the U.S., or if it spans groups from disparate regions. In addition, the similar socioeconomic profiles within markedly different health care systems allows us to examine the extent to which differences in healthcare infrastructure mitigate or exacerbate immigrant-native differences in maternal health behavior. Given that prenatal care is free in the UK, and given that all new mothers participate in home visiting programs, we might expect to find better health behaviors among all U.K. mothers relative to U.S. mothers. We might also expect to find less of a gap between native-born and immigrant mothers in the U.K., assuming that both groups are receiving good prenatal care and information. Because we are comparing only two countries and are not testing the influence of one specific policy, we cannot draw any firm conclusions about the consequences of the two health care systems. However, we view this comparison as a first step at understanding the ways in which health policies are associated with maternal health behaviors and how this differs for native-born and immigrant mothers.

We uncover four important findings. First, the "Hispanic paradox" extends not only to other socioeconomically disadvantaged immigrant groups, but also to more advantaged mothers. Secondly, in both settings these differences are fairly stable over children's early life course; we find no consistent evidence for processes of convergence or divergence between groups. Third, in neither the U.S. or the U.K. do differences in mothers' social and instrumental support play a strong explanatory role in accounting for the immigrant advantage. Finally, we find that the foreign-born advantage in health behavior is equally strong in the U.K. These findings lead us to propose that families who migrate do so with the welfare of their current or future children in mind. The migration literature has long focused on migration as an investment in socioeconomic mobility (e.g., Todaro 1976). Similarly, scholars of migration and health have often pointed to the potential health

selectivity of migrants (e.g., Landale, Oroporsa and Gorman 2000; Jasso et al. 2004). We propose a broader view of immigrant selectivity, one in which migrants are selected not only on health, but also on their desire to maximize the welfare of their children. In addition to being a socioeconomic investment, migration may also be a parental investment.

THE HEALTH INCORPORATION OF FOREIGN-BORN MOTHERS

Nativity Differences at Birth

Mothers' health behaviors are of special interest because they reflect children's home environments and are strongly related to children's own health. Existing research on nativity differences in health behavior in the U.S. has produced important findings, particularly for the period around birth. Foreign-born, Hispanic mothers, for example, are more likely than native-born mothers to fully immunize their children and to breastfeed, especially if they are "less acculturated" (Anderson et al. 1997; Kimbro et al. 2008). Rates of infant mortality and low birth weight are also significantly lower among foreign-born, Hispanic mothers. These patterns vary within the Hispanic population: the prevalence of low-birth-weight is above-average among Puerto Rican-born mothers, for example, and below-average among Mexican, Cuban and Central/South American mothers (Landale, Oropesa and Gorman 1999). Evidence among non-Hispanic mothers and infants is less clear; while there is some evidence that foreign-born mothers from East Asian and South Asian countries are less likely to give birth to low-birth-weight babies, Filipino mothers have above-average levels of low birth weight (Landale, Oropesa and Gorman 1999). Existing research tells us little about whether the foreign-born health advantage extends across the socioeconomic spectrum.

Do Nativity Differences Persist into Early Childhood?

Despite the common focus on the period of infancy, our knowledge of the evolution of nativity differences over time is quite limited. To address the question of whether foreign-born mothers' health behavior deteriorates with increased time in the destination country, researchers

ideally should examine behavioral trajectories within the same mothers over time. Because such data have not been readily available, researchers typically rely on cross-sectional comparisons of mothers, stratified by generational groups. Using this approach, they find that foreign-born women's health is better than that of their peers from later generations (Antecol and Bedard 2006; Gordon-Larsen, Adair and Popkin 2003). Similarly, researchers who stratify by number of years in the U.S. find that immigrant-native differences become smaller with increasing lengths of time in the United States (e.g., Antecol and Bedard 2006). Unfortunately, comparing across generational groups or measuring the number of years in the U.S. does not fully reveal whether different groups have different trajectories. Within the foreign-born, for example, there may be important compositional differences that vary with the year of arrival, including the context of reception, reason for migration, or socioeconomic circumstances. These differences may produce variation across generational groups that has little to do with individual trajectories.

Existing studies suggest that the health advantage of foreign-born mothers should decline over time (e.g, Antecol and Bedard 2006). In this scenario, a process of *convergence* occurs, whereby the deterioration of mothers' health behavior is more rapid within the foreign-born population than within the native population. This process has been observed in the U.S. with respect to trajectories of weight gain among adolescents (Jackson 2009). Residential, family and socioeconomic factors provide one potential explanation for convergence across nativity groups: adults, for example, may alter their levels of physical activity and eating habits (Akresh 2007; Morales et al. 2002) to become more in line with native-born peers in their environments, and in the composition of their kin and non-kin networks. Alternatively, a process of *divergence* may occur, whereby foreign-born parents and children maintain healthier behaviors over time. First-generation families may benefit from a combination of dense ethnic networks and increases in family socioeconomic status, providing a

layer of support that makes it easier for them to maintain healthy behaviors as children age. Finally, it is possible that nativity differences remain *stable* over time. Stability does not necessarily predict equality across nativity groups, but rather no significant temporal change in the gaps.

It is impossible to study trajectories without also being aware of health selectivity. Migration processes can drive observed patterns of convergence or divergence upward or downward for several reasons. If those who migrate are in fact the healthiest of their sending populations, then some degree of "regression to the mean" is inevitable (Jasso et al. 2004). Factors related to the migration process—that is, who migrants are and whether they fully represent their sending populations—should therefore be considered along with contextual factors as possible explanations for nativity differences, as well as changes in their size over time.

DIFFERENCES IN ACCESS TO SOCIAL SUPPORT: A POSSIBLE EXPLANTION?

Existing research on the health integration of foreign-born mothers and children offers little explanation for immigrant-native differences. Strong nativity differences at birth may reflect either differences related to migration and the composition of immigrants vs. natives, or differences in the host environment, summarized by Jasso et al. (2004: 240) as the migration models of "initial selectivity" vs. "subsequent trajectory." With respect to selectivity, foreign-born mothers may represent the healthiest members of their native population, therefore not fully representing the sending population and driving estimates of the foreign-born advantage in health and health behaviors upward. There is surprisingly little empirical evidence for this idea, largely because of the lack of data permitting comparison of immigrants to the population in both their sending and receiving countries. Existing research suggests little evidence of health selectivity among Mexican adults (Rubalcava et al. 2008), but stronger health selection among Puerto Rican mothers, (Landale, Oropesa and Gorman 2000).

We consider differences in migrants' support systems, which are a product of both the resources that migrants bring with them as well as their circumstances upon arrival. Specifically, we examine three aspects of support systems: household composition (including the presence of a spouse), instrumental support, and social integration. The presence of additional adults within the household to assist with caring for the child and making decisions is expected to provide a support buffer against stressful circumstances that might otherwise lead to mothers' adoption of unhealthy behaviors (e.g., Kiernan and Mensah 2009; Meadows et al. 2008). Extra-household support networks may also play a role in structuring mothers' health behaviors related to their own and their children's health. In particular, mothers may benefit from the presence of both resource-related support, or instrumental support, and interaction-based support, indicative of the degree of their social integration. Families who can rely on someone for short-term financial or child care assistance are more likely to be able to maintain low levels of stress and healthy behaviors. In addition, socially integrated mothers have more readily available access to networks of other parents, providing information and social norms that can aid in health-related decision-making (Berkman and Glass 2000). Both forms of support also reflect a certain degree of strength in social ties and buffers against social stressors, the presence of which is strongly associated with health behaviors, morbidity and mortality (House 2001; Thoits 1995).

Evidence on nativity differences in support systems is clearer with respect to within-household networks than for social ties outside of the household. There are striking differences in family and household composition between migrant vs. native families. Children growing up in immigrant families are more likely than natives to live with both parents (Landale, Oropesa and Bradatan 2006). This is also the case in the U.K. except for families from the Caribbean and Africa (Platt 2009)). In addition, extended family residence arrangements are more common in foreign-

born households (Roschelle 1997): 12% of all U.S. households in 1990 contained extended family members, compared to almost 30% of foreign-born households (Glick, Bean and Van Hook 1997). Similarly, in the U.K., 10% of South Asian families in 2001 contained three generations as compared with 2% of all U.K households (Dobbs et al 2006). Theory and evidence on nativity differences in extra-household social ties is more mixed. Whereas some argue that migration reinforces social ties (Rumbaut 1997), others point out that geographic mobility disrupts social ties in the sending community, thereby reducing the size of migrants' social networks (Hagan, MacMillan and Wheaton 1996; Portes 1998). Consistent with this argument, Landale and Oropesa (2001) find that Puerto Rican mothers of young children in the U.S. have lower levels of social support than both natives and Puerto Rican women living in Puerto Rico. Accordingly, they also find that nativity differences in social support do not explain birth outcome differences.

Migrants' support systems are comprised of both the resources that they bring with them (within-household composition) as well as those that they accrue in the host country (extra-household networks). Examining these differences, as well as how they relate to health, provides empirical leverage on the question of what lies behind nativity differences in health behaviors.

A COMPARATIVE LENS

The United Kingdom provides a useful case for both extending our understanding of the Hispanic paradox to a broader range of foreign-born groups, as well as providing a point of comparison to U.S. patterns. Despite a longstanding interest in migrant health in the U.K. (Marmot 1993), research on nativity differences in mothers' and children's health behaviors and outcomes has been limited. Although registration data have provided information on infant mortality and low birth weight (e.g., Collingswood Bakeo 2006), survey data that allow researchers to examine these issues have only recently become available (Hawkins et al. 2009; Panico et al. 2007). 2007 British

statistics show that 11% of the British population is foreign-born, and 20% of children and adolescents below the age of 18 are either foreign-born or the child of one or more foreign-born parents. Today there are sizeable populations of non-white immigrants from South Asia (India, Pakistan and Bangladesh), Africa and the Caribbean. At the time of the 2001 Census, Indians were the largest minority group, followed by Pakistanis, Black Caribbeans, Black Africans and those of mixed ethnic background; smaller groups include Bangladeshi and Chinese minorities (White 2002).

Among British migrants, socioeconomic profiles differ substantially. Whereas migrants from the Caribbean, Pakistan and Bangladesh have lower education and occupational qualifications than whites, on average, those from India, Africa and China have higher average qualifications (Modood 2003). Although black Caribbean migrants have very low levels of high professional qualifications, Pakistanis and Bangladeshis are more internally polarized, with both poorly and very highly qualified migrants. U.S. research examining nativity differences in socioeconomic status also demonstrates differences across ethnic groups. Foreign-born Mexican men and women, who comprise the largest U.S. immigrant group, earn less than U.S.-born Mexican-Americans and non-Hispanic whites (Allensworth 1997; Verdugo and Verdugo 1985). Beyond the Mexican case, those born in Central or South America also gain less financially from education than their native-born peers (Tienda 1983); these patterns changed little during the period between 1970 and 1990 (Snipp and Hirschmann 2005). Asian-born adults are internally polarized, clustered at both the top and bottom of the socioeconomic hierarchy (Zeng and Xie 2004). As a whole, however, there is evidence that Asians broadly categorized are more successful than the equally broad Hispanic group in converting education into economic and occupational success (Iceland 1999; Niedert and Farley 1985).

The very different composition of the foreign-born population in the U.K. relative to the U.S., as well as the diversity of socioeconomic profiles and ethnicities in each setting, allows for a

broader consideration of the "immigrant paradox." On the one hand, generally similar social and demographic conditions in the U.S. and U.K. might lead to a similar incorporation process among migrants into each context. Both countries share similar patterns of family formation (Platt 2009) and socioeconomic inequality: income inequality is higher in the U.S. (e.g., Banks et al. 2003) but levels in both societies are high and have increased over the last several decades (Wilkinson and Pickett 2009). On the other hand, there are important structural differences between the U.S. and U.K. that may produce smaller disparities between the foreign-born and natives in the health behaviors of mothers and children. Free health care provided through the British National Health Service, as well as more generous policies related to home visits, priority medical appointments for children, and child centers which provide integrated child care services, may make it easier for all families to maintain adequate health care, healthier behaviors and outcomes. More generous policies also exist in the U.K. with respect to family assistance and social housing (Gornick and Myers 2005; Hills 2007). Although we cannot directly test the influence of these policies, the different social programs aimed at reducing disparities among families and children suggest that we may observe weaker inequalities in the U.K.

DATA AND METHODS

Data

Our analysis is based on two national birth cohort studies well suited to studying nativity differences in health behaviors: the American *Fragile Families and Child Wellbeing Study* (FFS) and the U.K. *Millennium Cohort Study* (MCS). Both studies are representative of national populations, contain rich longitudinal information on families' and children's contexts and health, and oversample ethnic minority families.

FFS. The FFS is a national birth cohort study following approximately 5,000 children born in large U.S. cities between 1998 and 2000, including a large oversample of births to unmarried parents. When weighted, these data are representative of births in cities with populations over 200,000. Mothers, and most fathers, were interviewed in the hospital soon after birth. The initial interviews were followed by telephone interviews with both parents when the child is 1, 3, and 5 years old; the 9 year interview is currently in the field. These "core" interviews provide information on socio-demographic characteristics, parents' health, parental relationships, parenting, and child wellbeing. At ages 3 and 5, the child's primary caregiver (typically the child's mother) participated in an additional in-depth interview and assessments focusing on parenting, child health and development.

MCS. The MCS is the fourth of Britain's national longitudinal birth cohort studies, providing information about children and their families in the four countries of the United Kingdom. The first wave, carried out during 2001-2002, included 18,552 families and 18,818 cohort children. Information was first collected from parents when the babies were nine months old. The sample design allowed for an over-representation of families living in areas with high rates of child poverty or high proportions of ethnic minority populations. The first wave provided information on the circumstances of pregnancy, birth and the early months of life. The main caregiver (in most instances the mother) was interviewed again when the cohort child was age 3 years, 5 years and 7 years (age 7 data are not yet available). These interviews and the baseline survey provide detailed information on the demographic, social and economic situations of the families and the health and well-being of the children and their parents.

Measures

Mothers' Health Behaviors. We examine mothers' health behaviors at the time of the child's birth, and between birth and age 5. Our focus is on behaviors that are meaningfully and directly related to both mothers' and children's health, and comparable across the two data sources; this allows us to provide a comprehensive picture of maternal inputs into child health. At the time of the child's birth in both surveys, we measure *breastfeeding initiation* (yes/no) and *smoking during pregnancy* (yes/no).[1] *Prenatal drinking* is a trichotomous indicator in the FFS (never, sometimes, often), and a 5-point scale in the MCS, ranging from never to more than 3 times/week. In each survey we measure *early prenatal care* by distinguishing among mothers who first sought care in the third, second or first trimester for pregnancy. Later in childhood, from ages 1-5, we measure mothers' *smoking behavior around the child* (smokes/does not smoke around child) as well as mothers' *frequency of drinking*. In the FFS, we create a measure of binge drinking indicating whether mothers drink at least 4 alcoholic beverages per day. In the MCS, we create a 5-point scale ranging from never to more than three times/week.[2]

Nativity and Race/Ethnicity. Although all children are born in either the U.S. or U.K., mothers may be foreign-born. We separate foreign-born mothers (first-generation) from those born in the U.S. or U.K. (second generation). Within the foreign-born group we separate mothers by ethnicity. In the FFS we distinguish between Hispanic and non-Hispanic foreign-born mothers. Small sample sizes prevent us from disaggregating further by ethnicity either within or outside of the foreign-born group; close to 60% of foreign-born Hispanic mothers identify themselves as Mexican, with other mothers distributed across Puerto Rican, Cuban and other Hispanic ethnicities. In the

[1] We recognize that distinguishing among levels of prenatal smoking and drinking is potentially important (e.g., Kelley, Day and Streissguth 2000). In the MCS, there are not enough cases in each nativity group when we create a smoking trichotomy distinguishing among no, low/medium and heavy prenatal smoking, so we proceed with the dichotomous measure. Similarly, a measure indicating more frequent drinking (number of drinks per day) in the MCS, where such information is available, does not provide enough variation by nativity.

[2] Again, although we recognize that this measure is not ideal, very small to nonexistent sample sizes prevent us from using a more stringent drinking measure in the MCS.

MCS, we distinguish among South Asian (Indian, Pakistani, Bangladeshi), black (African, Caribbean), white and other foreign-born mothers. Although we began with more disaggregated categories that separated Indian, Pakistani, Bangladeshi, black African, black Caribbean, other (mostly East Asian) and white foreign-born mothers, Wald and likelihood ratio tests indicate that the South Asian ethnicities do not significantly differ in their relationships with the outcomes, nor do the black ethnicities. "Other" ethnicity foreign-born mothers differ significantly from South Asian, black and white mothers, so we analyze them in their own foreign-born category.[3] In the MCS, information about the country of origin was obtained when children were 3 years old; the sample is therefore limited to mothers who are present at age 3. A measure of race/ethnicity separates non-Hispanic white (reference), Hispanic, black, and other mothers in the FFS, and black (African or Caribbean), South Asian (Indian, Pakistani, Bangladeshi), other and white (reference) mothers in the MCS. The reference category for nativity is therefore non-Hispanic, U.S.-born in the FFS, and white, U.K.-born in the MCS.

Access to Social Support. We differentiate among household composition, instrumental support, and social integration. Measures of *household composition* include both family structure and extended family residence. In both samples, we distinguish women who are single at the time of the child's birth (reference) from those who are married to the biological father or cohabiting with the biological father. At later ages, we distinguish among mothers who are single, married to the biological father, cohabiting with the biological father, or coresiding (married or cohabiting) with a non-biological father. We also include a measure of whether one or more grandparents live in the household (grandmother only in FFS).[4] Three measures of *instrumental support* in the FFS indicate

[3] Results from the Wald and likelihood ratio tests are available upon request.

[4] The earliest information about grandparent presence in the MCS is at 9 months. Grandparents present when children are 9 months old are likely to have been present at birth; nonetheless, it is possible that some grandparents moved into the household after the child was born.

whether mothers have a source for financial support (no=reference); childcare; and housing. In the MCS, two measures indicate whether mother have received money from the child's grandparents in the last year (no=reference) or have a general source of help/support (mothers can choose among options, including health visitors, religious groups, and telephone call centers). Finally, to measure *social integration* in the FFS we use mothers' reports of whether they have at least one close friend; whether they feel alone; and whether they know most of their neighbors. In the MCS, mothers report whether their friends live locally; whether they are friendly with their neighbors; and the frequency of visits with friends (never, 1-3 times/week, 3+ times/week).

Sociodemographic Characteristics. Finally, we measure characteristics that are correlated with both nativity and parental health inputs. In the FFS, *maternal education* differentiates mothers according to less than high school, high school diploma, some college, or college diploma or higher. In the MCS, mothers' occupational skill qualifications based on the National Vocation Qualification (NVQ) system are used to indicate education. NVQ levels denote the degree of competence required by an employee to perform a particular job, with higher levels indicating a more complex occupational skill set. There are five levels (1-5), each of which includes both academic and vocational qualifications: level 1 (reference category) includes low-scoring O-level grades and the lowest vocational certificates; level 2 includes passing O-level grades and their vocational equivalents; level 3 includes at least two A-level exams and vocational equivalents; level 4 includes "sub-degree" qualifications and certificates, and level 5 includes university diplomas, teaching and nursing degrees and post-university education. To measure *family income,* we include the household poverty ratio in the FFS (adjusted for household size and the number of children) and total family income in the MCS. Finally, we include a measure of mothers' age at birth in each sample.

Method

The first step in the analysis is to examine nativity differences in maternal health inputs before birth, at birth, and into early childhood. In analyses of breastfeeding, prenatal smoking, prenatal drinking (FFS), binge drinking at age 5 (FFS) and smoking behavior around the child at age 5, we estimate binary logistic regression models:

$$\log[\frac{p_i}{1-p_h}] = \beta_0 + \beta_1 X_i + e_i \quad (1)$$

where $\log[\frac{p_i}{1-p_i}]$ equals the log odds of *p*, the probability that each mother, *i,* engages in a particular health behavior. X_i is a vector of mother and family-level characteristics (including nativity and ethnicity), and e_i is a individual-level error component. In analyses of prenatal and age 5 drinking in the MCS, as well as prenatal care in both samples, we extend equation (1) to model the outcomes ordinally, in order to account for unequal distances between thresholds. For each outcome we begin by estimating nativity differences at birth and/or age 5, net of the sociodemographic factors described above, to ask whether: a) healthier behaviors among Hispanic immigrants also extend to other foreign-born groups in both countries; and b) whether nativity differences are weaker in the U.K. Next, we successively add each set of age-specific support network measures: household composition (all ages), instrumental support (age 5 only), and social integration (age 5 only). Although we present and discuss the parameter estimates, changes in relationships across nonlinear models are best assessed through comparing changes in predicted values; in a nonlinear model changes in the coefficients also depend on changes in the other coefficients in the model. From the parameter estimates we calculate the predicted probability of being in a particular category of each outcome, across groups of mothers.

Although examining mothers' behaviors when the child is age 5 gives a sense of the degree of persistence in nativity differences, it does not provide a truly dynamic picture. As a supplement, we use latent growth curve techniques to estimate the degree of convergence, divergence or stability in nativity differences in mothers' drinking and smoking over the child's early life course.[5] Growth curve models, an extension of multilevel models, provide the advantage of modeling not only cross-sectional variation, but also variation in growth or decline over time, within the same individuals; the method provides an effective way of examining the extent to which individuals' trajectories vary around a mean, as well as whether that variation can be predicted by particular covariates (Bollen and Curran 2006; George and Lynch 2003; Meadows and McLanahan 2008). An unconditional model estimates an individual-specific (*i*) and time-specific (*t*) trajectory of maternal health inputs, (*y*), as a function of a mother-specific intercept (α), and mother and time-specific slopes (β) and errors (ε). λ is a constant. This individual-level trajectory equation can be written as follows for the binary or ordinal case:

$$y_{it}^{*} = \alpha_i + \lambda_t \beta_i + \varepsilon_{it} \quad (1)$$

where y_{it}^{*} is a underlying continuous variable indicating the ordered categories, and

$$y_{it}^{*} = \begin{cases} 0 \ \ if \ \ y^{*} < \lambda_t \\ 1 \ \ if \ \ y^{*} \geq \lambda \end{cases}$$

The second level of the growth model allows mothers' trajectories to vary as a function of not only time, but of covariates that vary across, but not within, individuals. This amounts to equations for the random intercepts and slopes:

[5] Because measures of smoking around the child are only available at age 5 in the FFS, we examine general smoking behavior (whether or not it occurred around the child) for the growth curve analysis. The MCS measures remain the same.

$$\alpha_i = \alpha_0 + \alpha_1 x_{1i} + \alpha_2 x_{2i} + ...\alpha_k x_{ki} + u_i \quad (2)$$

$$\beta_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + ...\beta_k x_{ki} + v_i \quad (3)$$

where x_1 through x_k are time-invariant measures (e.g., nativity, race/ethnicity) that predict group differences in starting points (α) and the growth factor (β). u_i and v_i are individual error terms. In order to enable model estimation and permit variation around the intercept, thresholds are fixed across time and the intercept growth factor mean is fixed at 0.

Missing Data, Health Selection and Attrition. Missing values on both the predictor and outcome variables in our analytic sample are imputed using multiple imputation techniques, which use complete data from theoretically relevant predictor variables to fill in missing values (Allison 2002; Rubin 1987). In latent growth curve models, we limit the sample to those who participate in the survey at all waves.[6]

If foreign-born mothers represent the healthiest members of their native population, they may not fully represent the sending population, driving estimates of the foreign-born health behavior advantage upward. Because the data do not allow us to examine how the health of foreign-born mothers compares to that of mothers in their sending population, we caution that any health advantage that we observe among immigrant mothers and children should be interpreted as upper-bound estimates. Return migration may also contribute to changes that are observed over time: if the least healthy foreign-born mothers are more likely to return home, then rates of convergence over time toward natives' health behaviors may be lower than they would otherwise be (or, conversely, rates of divergence may up upwardly biased).

[6] The findings are robust to using the full information maximum likelihood approach in place of multiple imputation.

Examining attrition in the FFS shows that 15% of mothers who participate at the time of the child's birth do not participate by the fourth wave, when the child is five years old. Foreign-born mothers are more likely than U.S.-born mothers to drop out by age five (26% vs. 13%). Foreign-born mothers who remain are not positively selected on health behaviors. Among natives, those who drop out are slightly less likely to breastfeed than those who remain (45% vs. 50%) and slightly more likely to smoke while pregnant (26% vs. 22%).In the MCS, approximately 21% of mothers who participate in wave one do not participate in wave three, when their children are five years old. Foreign-born mothers are slightly more likely to drop out by age five than natives (14% vs. 11%). Natives who drop out are less likely to breastfeed (56% vs. 68%), more likely to smoke while pregnant (32% vs. 24%), and slightly less likely to seek early prenatal care (74% vs. 78%) than those who stay. Foreign-born mothers who drop out do not have systematically poorer health behaviors, however. Although there is evidence of differential attrition by nativity, it may not be associated with health. On the one hand, positive health selectivity among natives and a lack of systematic health-related attrition among the foreign-born suggests that the immigrant health advantage may be understated. On the other hand, we do not know the degree of migrant mothers' health selectivity. It is therefore importance to interpret the foreign-born advantage as an upper-bound, and any convergence or divergence should be viewed as lower and upper bounds, respectively.

FINDINGS

Descriptive Distributions

Health. Table1 reveals striking nativity differences in mothers' health behaviors. In the U.S., 42% of U.S.-born mothers indicate smoking during pregnancy, compared to 6% of non-Hispanic immigrant and 1% of Hispanic immigrant mothers. Hispanic and non-Hispanic immigrant mothers are more likely to breastfeed; less likely to drink during pregnancy; less likely to smoke and

to smoke around their children at all ages; and less likely to report episodes of binge drinking than U.S.-born mothers. In the MCS, South Asian, black and other immigrant mothers are much less likely to smoke or drink during pregnancy; less likely to smoke around their children; less likely to drink on a regular basis; and more likely to breastfeed. White immigrant mothers, although they are much more likely to breastfeed than U.K.-born mothers, have only slightly smaller levels of prenatal smoking and smoking around their children; and slightly higher levels of drinking during children's early lifetimes. In both countries, it is worth pointing out that there are no sizeable differences in the timing of prenatal care across nativity groups.

Sociodemographic Characteristics. Table 2 displays the distribution of sociodemographic characteristics for the total sample, as well as across nativity groups. The size of the foreign-born sample is comparable in the two surveys: 17% in the FFS and 14% in the MCS. In the U.S., about 6% of mothers are foreign-born, non-Hispanic, and about 11% of mothers are both foreign-born and Hispanic. In the U.K., 4% of mothers are foreign-born, white; 6% foreign-born, South Asian; 2% foreign-born, black; and 2% foreign-born, other ethnicity. Nativity groups vary dramatically in their levels of education and family income. In the U.S., foreign-born, non-Hispanic mothers have levels of education and family income that are markedly above average: 33% of these mothers have a college degree or higher, for example, relative to 11% of the total sample. Hispanic immigrant mothers have below-average levels of education and income: just 9% of these mothers have a household poverty ratio of 300% or greater, compared to 24% of the total sample and 44% of non-Hispanic immigrant mothers. In the MCS, few mothers have the highest professional qualifications, with 3% of mothers in the 5th NVQ level (equivalent to a university diploma or higher). White immigrant mothers are more likely to have high professional qualifications (16%); mothers of other ethnicity are also overrepresented in the highest level (7%), although these mothers

also have above-average representation in the lowest NVQ level. South Asian and black immigrant mothers are disproportionately in the lowest NVQ level, but black mothers have equal representation at higher levels, relative to the total sample and to U.K.-born mothers. With respect to family income, white immigrant mothers are more likely than all other mothers to have high levels of family income.

Access to Social Support. Table 2 also shows unadjusted nativity differences in mothers' support networks. In both countries there are striking differences in *household composition*. In the FFS, immigrant mothers are much more likely to be in married or cohabiting relationships than their U.S.-born peers: 43% of U.S.-born mothers are not living with the father at the time of the child's birth, compared to 18% of non-Hispanic immigrant mothers and 25% of Hispanic immigrant mothers. These differences persist through children's fifth birthdays, when foreign-born mothers are still much less likely to be single. The particularly high level of cohabitation among Hispanic immigrant mothers likely reflects normative differences in the meaning of marriage and cohabitation in many Latin American countries, where cohabiting and marital relationships are similarly valued (Choi and Seltzer 2009). There are similarly striking differences in the MCS: with the exception of black immigrant mothers, who are the most likely to be single throughout the child's early life course, immigrant mothers are more likely to be married and less likely to be single at all ages. There are no consistent nativity differences in extended family arrangements. In the FFS, U.S.-born mothers are the most likely to have the grandmother present in the household at the time of the child's birth, with smaller differences by age five.[7] In the MCS, South Asian immigrant mothers are

[7] The seeming inconsistency of this finding from the higher prevalence of extended family households reported by Glick, Bean and Van Hook (1997) may make sense, given their finding that the difference may be driven by large numbers of "horizontally integrated" households among the foreign-born, in which single adult migrants live with relatives.

more likely than all other groups to have a grandparent in the household (22% at age 9 months, relative to 6% of U.K.-born mothers), with smaller or no differences among other ethnic groups.

With respect to mothers' levels of *instrumental support* and *social integration*, Table 2 shows small nativity differences, with some evidence of *weaker* extra-household support among immigrants. In the FFS, mothers are equally likely to have an emergency source for financial support and childcare, with Hispanic immigrant mothers slightly less likely to have access to an emergency source of housing. Immigrant mothers, both Hispanic and non-Hispanic, are slightly less likely to feel socially integrated in their neighborhoods. In the MCS, South Asian, black and other immigrant mothers are less likely to have received money from grandparents, or to indicate a source for emergency help/support. South Asian and black immigrant mothers are also more likely to never see their friends or to meet with friends on three or more occasions per week.

Taken together, the descriptive findings indicate, first, that the multivariate models will predict large nativity differences in mothers' health inputs in both the U.S. and the U.K., and that these differences may also extend to more socioeconomically advantaged mothers, especially in the U.S. Secondly, nativity differences in distributions of mothers' support networks suggest that household composition may play a stronger explanatory role, especially in the U.K., than markers of instrumental support and social integration.

Multivariate Findings

Does the Paradox at Birth Reach Across Ethnic Groups and Countries? Tables 3 presents the parameter estimates from multivariate models of nativity differences in mothers' health behaviors in the FFS and MCS; the models adjust for sociodemographic factors but not markers of social support. Each column contains the estimates for a different outcome. The first panel of Table 3 shows striking differences among the FFS respondents. The odds of prenatal smoking are

significantly lower among non-Hispanic immigrant mothers—70% lower—net of observed social and demographic differences ($e^{-1.237}$). These differences are significantly stronger among Hispanic mothers only in the case of prenatal smoking ($e^{-1.237-1.501}$). Although there are no significant differences in the odds of early prenatal care between non-Hispanic immigrant and native-born mothers, Hispanic immigrant mothers are significantly more likely to seek early prenatal care. The odds of breastfeeding are over four times higher for non-Hispanic immigrant mothers than for non-Hispanic natives, net of observed social and demographic differences ($e^{1.451}$). Hispanic immigrant mothers are even more likely to breastfeed, almost seven times more likely than non-Hispanic native mothers ($e^{1.451 + .449}$); this difference is marginally significant. Table 3 also confirms existing findings about disparities in health behaviors among U.S.-born mothers. Black mothers are less likely to breastfeed than non-Hispanic white mothers, but also less likely to smoke and drink while pregnant.

The second panel of Table 3 shows similarly large nativity differences among the MCS mothers. White immigrant mothers are significantly more likely than U.K.-born white mothers to breastfeed ($e^{.778}$), but no less likely than native whites to smoke or drink while pregnant, and no more likely to receive early prenatal care. South Asian, black and other immigrant mothers are less likely than white immigrant mothers to breastfeed, net of sociodemographic factors, but still more likely than white natives. They are significantly less likely to smoke and drink while pregnant.

These differences are more intuitively presented in the form of predicted probabilities, which provide a sense of differences between the average foreign-born and native mother in a particular ethnic group. Table 4A displays the predicted probability of each behavior in the FFS for non-Hispanic U.S.-born, non-Hispanic immigrant, and Hispanic immigrant mothers; social and demographic characteristics are held constant at their means. Panel 1 shows that the predicted probability of breastfeeding is 36% higher among non-Hispanic immigrants than among natives

(.826 vs. .527), and 39% higher among Hispanic immigrants. Even wider gaps exist for prenatal smoking, where non-Hispanic immigrant and Hispanic immigrant mothers are 68% and 99% (respectively) less likely than U.S.-born mothers to smoke while pregnant. Non-Hispanic immigrant mothers are 41% less likely to drink heavily while pregnant. The size and significance of these differences suggests that, in the U.S., healthier behaviors among the foreign-born are not limited to Hispanics, although in some cases they are strongest among that population of mothers. Panel 1 in Table 4B shows the magnitude of these differences in the MCS. South Asian immigrant mothers, for example, are almost 100% less likely to smoke while pregnant (.227 vs. .0044). The gaps are of similar magnitude for black and other mothers.

As a whole, these findings suggest that the phenomenon of healthier behaviors and more positive birth outcomes among foreign-born mothers in the U.S. is not limited to Hispanics. There are also large and significant differences between non-Hispanic immigrant mothers (most of whom are Asian or black) and U.S.-born non-Hispanic mothers, despite the significantly higher average levels of education and family income available to these mothers. In the U.K., patterns at birth are more mixed among white immigrant mothers, the most socioeconomically advantaged foreign-born ethnic group. White immigrant mothers are significantly more likely to breastfeed than U.K.-born white mothers, but no less likely to smoke or drink while pregnant. In contrast, South Asian, black and other immigrant mothers are more likely to breastfeed and less likely to smoke or drink. These findings suggest that, although the foreign-born advantage may be strongest among the most socioeconomically disadvantaged groups, it is not limited to these mothers and children. With respect to the size of nativity differences across the U.S. and U.K., in light of the much stronger welfare state in the U.K. providing health care and health-related parenting support and information, it is surprising that there are not smaller differences between native and immigrant mothers in the

U.K. In fact, the differences are of very similar size. The similarity between the two countries in prenatal care is especially surprising, given the difference in the two health care systems and given previous concerns about immigrant mothers' access to care in the US.

How Persistent is the Paradox? Tables 3A-3B and 4A-4B begin to demonstrate the persistence of nativity differences in maternal health inputs over children's early life course. Tables 3A and 4A show that, in the U.S., the odds of smoking around the child and binge drinking at age five are significantly lower among non-Hispanic immigrant mothers than among non-Hispanic natives: non-Hispanic immigrant mothers are 64% less likely to smoke around their child, and over three times less likely to binge drink. In the MCS, white immigrant mothers are significantly less likely to drink frequently when the child is five years old, but no less likely to smoke around their children. South Asian, black and other immigrant mothers are significantly less likely to drink frequently when the child is five, and to smoke in the presence of their children. Panel 1 in Table 4B shows that South Asian immigrant mothers, for example, are three times less likely to smoke around their children (.127 vs. .0324) than U.K.-born whites. The fact that strong nativity differences remain at age five is suggestive of a stable process over time, rather than a process of convergence or divergence.[8] Comparisons across nativity groups cannot not fully reveal differential trajectories, however. Existing cross-sectional research on adults predicts a process of convergence over time between the health and health behaviors of natives and the foreign-born; we consider this as it relates to mothers' health behaviors. Tables 5A and 5B present latent growth curve estimates of nativity differences in mothers' smoking and drinking behavior for the FFS and MCS, respectively.

[8] In side analyses not shown here but available by request, we examine cross-sectional differences between recent and older migrants. Although there is a pattern of healthier behaviors among recent migrants, the differences between recent and older migrants are not consistently significant, and the gaps between older migrants and native-born mothers are also highly significant, also consistent with a process that is not limited to recent migrants.

In the FFS, smoking and drinking are examined between the ages of one through five, and in the MCS, between the time of the child's birth and age five.[9]

The findings confirm the pattern of stability in nativity differences over time that was suggested by the cross-sectional analysis, rather than convergence or divergence in mothers' behaviors. Table 5A shows that nativity is a significant predictor of latent baseline smoking behavior, with a significantly lower log odds of smoking at baseline among non-Hispanic immigrant mothers than among non-Hispanic, U.S.-born mothers. This baseline relationship is stronger still among Hispanic immigrant mothers, as well as among black and Hispanic native mothers. Examining the slopes, however, reveals no significant evidence of differential change in smoking behavior between foreign and native-born mothers. A similar pattern exists for binge drinking behavior in the FFS.[10] In the MCS, there is also more evidence for stability in nativity differences over time than for convergence or divergence. Despite significantly lower baseline smoking intercepts among South Asian, black and other immigrant mothers, there are no differences in the latent smoking growth factor. In the case of drinking frequency, there is some evidence of divergence across nativity groups over children's early life course. The latent drinking growth factor is significantly slower for white and black immigrant mothers than for U.K.-born white mothers: that is, although all mothers are predicted to increase the frequency of their drinking over time (slope = .437), the increase is slower among white and black immigrants. These findings suggest that, although there is great disparity in the quality of mothers' health-related behaviors and parenting inputs across nativity groups, these disparities are, for the most part, stable over time. This finding is interesting and inconsistent with both the regression toward the mean that would be

[9] As described earlier, we use general smoking behavior in the FFS for the growth models, rather than smoking around children. Smoking behavior around children was not measured at age 1.

[10] The lack of a significant baseline relationship is consistent with the cross-sectional relationship between nativity and binge drinking (not shown), which is significant at all ages except age 1.

expected to occur in a scenario of positive health selection, as well as the divergence that would follow from high levels of return migration among foreign-born mothers.

Does Access to Social Support Play an Explanatory Role? As a final step in the analysis we examine whether differences in social support access, both within and outside of households, account for the very strong nativity differences in both countries. Tables 6A and 6B show the parameter estimates for measures of mothers' sources of support. In both samples, there is a strong behavioral advantage associated with marriage: mothers married to their child's biological father at birth are significantly more likely to breastfeed and receive early prenatal care, and less likely to smoke while pregnant. The association between marriage and prenatal drinking is inconsistent across the two samples, with married American mothers significantly less likely than single mothers to drink while pregnant, and married British mothers significantly more likely to drink. In both samples, mothers who are married to the biological father when the child is five years old are significantly less likely to binge drink/drink frequently, whereas MCS married mothers are more likely to smoke around their child at age 5. The relationship between extended family composition and mothers' behaviors is inconsistent across and within the two samples. In the U.S. data, there is little evidence that grandmother presence is related to mothers' behaviors, whereas in the U.K. grandparent presence is related to significantly lower odds of smoking and drinking (positive outcomes), but also significantly lower odds of breastfeeding and early prenatal care (negative outcomes). There is weak evidence that instrumental support and social integration are related to mothers' behaviors in either country. In the U.S., mothers with someone to rely on for housing are less likely to smoke around their children. There also is weak evidence that mothers who are socially isolated are more likely to smoke and drink. In the U.K., there is some evidence that mothers who socialize with friends very frequently are more likely to smoke and drink than mothers who do not.

As Tables 4A and 4B reveal, these weak and inconsistent relationships do not translate into an explanatory role for support networks. Table 4A shows that the predicted nativity gaps are essentially unchanged after successively adjusting for differences in household composition, instrumental support and social integration. Before adjusting for social networks, for example, the probability of smoking around children at age five is 64% lower among non-Hispanic immigrant mothers than among non-Hispanic natives (.187 vs. 0.0667); this difference remains at 62% after adjusting for all of the support network measures. Nativity differences are similarly unchanged in the MCS: the 98% gap in the likelihood of prenatal smoking between U.K.-born white mothers and South Asian immigrant mothers, for example, remains at 97% after adjusting for differences in household composition. The lack of explanatory power of instrumental support and social integration is not surprising, given the small nativity differences in the distributions shown in Table 2 and discussed above.

DISCUSSION

The large and growing presence of foreign-born mothers and children in both the United States and the United Kingdom implies an increasingly noticeable impact of this group's socioeconomic and health incorporation on the patterns observed among the total population—in social institutions such as the educational and health care systems, and on markers of health and social inequality. In this study we add to the long-standing sociological focus on the socioeconomic incorporation of immigrant families (e.g., Alba and Nee 2003) to consider health, a marker of well-being that is strongly correlated with socioeconomic success and meaningful in its own right. To be sure, there is a large cross-sectional literature demonstrating healthier outcomes among Hispanic immigrant mothers, despite lower socioeconomic status. Rich longitudinal data, however, now

permit consideration of whether the "paradox" is unique to Hispanics, or whether it extends to other immigrant groups with varying levels of socioeconomic advantage and disadvantage.

We expand our understanding of the health-related incorporation of foreign-born mothers in several ways. First, we examine whether the paradox in mothers' behaviors extends beyond U.S. Hispanics to non-Hispanic immigrant mothers in the U.S. and to white, South Asian, black African and Caribbean, and other (largely East Asian) immigrants in the U.K.. Studying mothers' own behaviors provides a proximate assessment of intergenerational and family-level processes that occur with migration. We consider not only the size of the paradox both at the time of children's birth, but also the degree of its persistence into early childhood. Secondly, we consider whether nativity disparities are weaker in the U.K., where a much stronger welfare state makes health information and care more readily accessible. Finally, by examining mothers' social and instrumental sources of support, both inside and out of the home, we provide empirical leverage on the question of whether the strength of family and social ties explains healthier behaviors among the foreign-born; this possibility is often asserted but rarely considered by scholars concerned about immigrant integration.

Drawing from two rich national data sources on the health and well-being of mothers and children, our analysis yields several important findings. First, we find that the "Hispanic paradox" extends to not only other socioeconomically disadvantaged immigrant groups, but also to more advantaged mothers. The immigrant paradox may not actually be a paradox: although the findings clearly demonstrate that foreign-born mothers who are socially and economically disadvantaged have much healthier behaviors than their native-born peers, on average, the same is observed among more advantaged immigrants, albeit not always as strongly. In the U.S., non-Hispanic immigrants, who are predominantly Asian and black, have significantly healthier behaviors than non-Hispanic native mothers, even though these groups are advantaged relative to the native population. In the

U.K., there is also some evidence of healthier behaviors among white immigrant mothers, who have above-average levels of education and family income. These differences can be interpreted as upper-bound estimates of the foreign-born advantage, given that we are unable to examine immigrants' representativeness or selectivity relative to their native populations. On a different selection note, it is reassuring that, despite a slightly higher likelihood of attrition, foreign-born mothers who stay are not positively selected on health.

Secondly, in both settings these differences are fairly stable over children's early life course. Nativity differences are still strong and meaningful when children are five years old, and we find no evidence of significant convergence across nativity groups in mothers' drinking and smoking behavior. Although it is possible that convergence will occur as children age, our findings indicate that the immigrant health advantage is not limited to birth outcomes. This finding is important and suggests that the behavioral advantage of foreign-born mothers does not disappear over time, as would be implied in a process of convergence and regression toward the mean. Third, in neither setting do differences in mothers' social and instrumental support play a strong explanatory role. The lack of an explanatory role for household composition (marital status and grandparent presence) is surprising, given substantial differences in composition across nativity groups. In contrast, it is not surprising that instrumental support and social integration do not play a stronger explanatory role, given that these measures are only weakly associated with nativity. Finally, we find that the foreign-born advantage in health behavior is equally strong in the U.K. Despite free health care, home visits, priority medical appointments for children, comprehensive child care services, and more generous family assistance policies, U.K.-born mothers still have significantly poorer health behaviors, on average, than their immigrant peers in a variety of ethnic groups. In both countries there is also very little evidence of differences in prenatal care; this finding is important and suggests

that all mothers are equally able to access medical care, despite their country of origin and socioeconomic standing. It is unclear whether similarly small differences would be observed among undocumented mothers.

Taken as a whole, the findings—extension beyond the Hispanic population, persistence in nativity differences over time, equally strong differences in the U.K., and a trivial explanatory role for support networks in both settings—cause us to revisit the question of what underlies nativity differences in maternal health inputs. Jasso et al. (2004: 24), in discussing nativity differences in health, distinguish between immigrants' initial health selectivity and subsequent health trajectories upon arrival. Whereas health selectivity produces health differences that reflect the resources that migrants arrive with, subsequent health trajectories are comprised of both these existing resources as well as those accrued in the host country. Our findings are also suggestive of an additional form of selectivity: one that reflects migration as a parenting investment, a decision made with the child in mind. Mothers who move in order to provide better long-term opportunities for their children, or with their future childbearing in mind, have made a substantial parenting commitment that may set them apart from their peers in both the sending and receiving country. The fact that strong nativity differences exist across such a wide variety of immigrant groups; that they are observed across two very different policy structures; and that they are not explained by within or extra-household support networks, imply that something about who immigrant mothers are, regardless of their origin and resource levels, is important for their own health behaviors and their children's well-being.

It is worth emphasizing that an explanation for nativity differences in mothers' health behaviors that focuses on parental investments is not inconsistent with an important role for health selection or cultural differences between native-born and migrant mothers. Although we are unable to examine immigrants' selectivity relative to their native populations, foreign-born mothers who

remain in the sample are not positively selected on health, and we do not observe a process of convergence or "regression to the mean," both of which would be expected under the scenario of a strong "healthy immigrant" effect. In addition, the existence of these differences across such a broad diversity of groups from disparate regions makes an argument favoring cultural differences less compelling. Surely, though, both health selection and cultural differences play a role in explaining nativity differences observed in the host country. We view the parenting investment idea as an additional, and equally plausible, form of selectivity that may be related to health, but that also reflects differences in parenting practices and subsequent child outcomes. That is, conceptualizing parental investment as an additional form of selectivity adds to, rather than competes with, the idea of immigrant selectivity. Immigrants may be selected on myriad factors--health, parenting and family composition, to name a few—and there is an important need for data that permit analysis of these selection processes in the home countries, before migration occurs.

An interpretation focusing on parental investments is also entirely consistent with an important role for children's environmental circumstances in their parents' new country. Indeed, evidence among adolescents suggests that convergence does exist across nativity groups during the transition to adulthood, with respect to overweight and obesity (Jackson 2009). The very different family, neighborhood and social arrangements experienced by immigrant families implies that as children grow up, their experiences in their environments will inform their subsequent trajectories.

More generally, the lack of a clearly defined socioeconomic patterning to the foreign-born health advantage also speaks to the potential for the immigrant population to complicate reciprocal connections between health and social status. Throughout the world, health is both a determinant and consequence of socioeconomic environments. Given the large number of first and second generation parents and children in the U.S and the U.K.., it is increasingly important to understand

the evolution of health trajectories among a diverse group of families and children, and to ultimately incorporate them into considerations of the population-level social implications of health inequalities.

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Table 1: Unweighted Maternal Health Behaviors of FFS and MCS Samples

	FFS					MCS					
Variable	For. Born, Non-Hisp	For Born. Hispanic	U.S. Born	Total	**Variable**	For. Born White	For Born. South As.	For. Born Black	For. Born Other.	UK Born	Total
Maternal Health Inputs					**Maternal Health Inputs**						
Smoked During Pregnancy	6	1	42	19	Smoked During Pregnancy	21	1	4	4	25	24
Breastfed	86	85	50	57	Breastfed	84	82	94	93	67	67
Drank During Pregnancy	8	7	14	13	First Received Prenatal Care						
First Received Prenatal Care					First Trimester	81	76	73	78	78	77
First Trimester	83	82	79	80	Second Trimester	19	22	25	21	21	22
Second Trimester	14	12	17	16	Third Trimester/Never	1	2	2	1	1	1
Third Trimester/Never	3	6	4	4	Smoking Around Child						
Smoking Around Child					*Age 1*	11	10	2	4	14	13
Age 1	-	-	-	-	*Age 3*	13	9	3	9	19	18
Age 3	14	3	25	22	*Age 5*	12	7	3	3	15	15
Age 5	5	2	18	16	Frequency of Maternal Drinking						
Maternal Binge Drinking					*During Pregnancy*						
Age 1	3	3	7	7	3+ days/week	2	1	0	0	2	2
Age 3	0	2	6	5	1-2 days/week	10	3	0	2	8	7
Age 5	2	2	7	7	1-2 days/month	9	3	0	2	8	7
Frequency of Maternal Smoking					Less than one day/month	17	7	0	4	15	13
Age 1					Never	61	85	100	91	68	72
None	92	95	70	73	*Age 1*						
< .5 packs/day	7	5	23	20	3+ days/week	18	1	2	2	14	12
.5-1 pack/day	1	0	7	6	1-2 days/week	24	1	8	6	27	24
>1 pack / day	0	0	1	0	1-2 days/month	21	1	8	11	22	21
Age 3					Less than one day/month	17	3	15	12	20	19
None	96	98	82	84	Never	19	95	67	69	16	24
< .5 packs/day	3	2	15	13	*Age 3*						
.5-1 pack/day	1	0	3	3	3+ days/week	19	1	1	4	16	15
>1 pack / day	0	0	1	1	1-2 days/week	25	1	8	9	28	26
Age 5					1-2 days/month	16	1	11	9	20	18
None	90	95	66	70	Less than one day/month	19	4	18	12	20	18
< .5 packs/day	8	9	24	21	Never	20	93	63	65	16	23
.5-1 pack/day	2	0	9	8	*Age 5*						
>1 pack / day	0	0	2	1	3+ days/week	20	1	3	5	19	17
					1-2 days/week	27	2	5	12	28	25
					1-2 days/month	19	1	10	6	19	18
					Less than one day/month	16	3	15	12	19	18
					Never	18	93	63	65	15	22
N	279	552	4067	4898	N	816	867	259	250	13159	15101

Cells show percentages, unless otherwise indicated

Table 2: Unweighted Descriptive Characteristics of FFS and MCS Samples

	FFS					MCS					
Variable	For. Born, Non-Hisp	For Born. Hispanic	U.S. Born	Total	**Variable**	For. Born White	For. Born. South As.	For. Born Black	For. Born Other	UK Born	Total
Nativity	6	11	83	100	**Nativity**	4	6	2	2	86	100
Race/Ethnicity					**Race/Ethnicity**						
Hispanic	0	100	19	27	Black African or Caribbean	0	0	100	0	2	4
Black	40	0	55	48	South Asian (Ind., Pak., Bang.)	0	100	0	0	4	9
NHW	18	0	24	21	Other	0	0	0	100	94	87
Other	42	0	2	4	White	100	0	0	0		
Maternal Education					**Maternal NVQ Level**						
< High School	25	64	33	35	1	14	59	47	37	21	27
High School Diploma	22	19	32	30	2	18	17	14	16	32	30
Some College	20	13	25	24	3	15	9	10	12	15	14
College or Higher	33	4	10	11	4	37	12	27	28	29	26
					5	16	3	2	7	3	3
Household Poverty Ratio					**Total Family Income (Pds)**						
0-49%	9	19	17	18	0-3100	1	4	3	3	1	2
50-99%	10	26	17	17	3100-10400	16	39	47	29	22	26
100-199%	19	33	26	26	10400-20800	28	39	27	37	33	33
200-299%	18	13	16	16	20800-31200	22	11	13	14	22	20
300%+	44	9	24	24	31200-52000	21	6	8	13	16	14
					52000 +	12	1	2	4	6	5
Mean Maternal Age at Birth	29	26.2	24.9	25.3	**Maternal Age at Birth**	30.6	27.7	30.8	30	28.6	28.4
Household Composition					**Household Composition**						
Birth					*Birth*						
Single	18	25	43	39	Single	10	7	46	22	17	19
Married	57	30	21	25	Married	70	92	42	71	58	58
Cohabiting	25	45	36	36	Cohabiting	20	0	12	7	25	24
Living with Grandmother	17	14	26	24	Living with Grandmother (9 months)	4	27	4	10	6	8
Age 5 (N=4,139)					*Age 5 (N = 15,468)*						
Single	21	31	45	31	Single	15	8	47	10	20	20
Married to Bio. Father	64	46	28	31	Married to Bio. Father	72	91	47	87	60	61
Cohab. With Bio. Father	9	23	12	13	Cohab. With Bio. Father	14	1	7	3	15	14
Coresiding with Non-Bio Father	6	6	15	14	Coresiding with Non-Bio Father	1	0	0	0	5	5
Living with Grandmother	15	10	11	11	Living with Grandmother	3	22	2	8	3	4
Instrumental Support, Age 5 (N= 4,139)					**Instrumental Support (N=15,468)**						
Source for money	89	84	85	85	Received money from grandparents	78	54	37	49	80	77
Source for childcare	88	89	88	88	Someone for help/support	71	46	45	51	70	68
Source for housing	83	79	86	85	**Social Integration (N=15,468)**						
Social Integration, Age 5 (N=4,139)					Friends Live Locally	84	88	71	81	88	87
Have Close Friends	90	84	92	91	Friends in Neighborhood	89	86	73	79	89	88
Feel Alone	12	8	7	7	Never See Friends	18	34	36	18	21	22
Know Most Neighbors	17	17	24	23	See Friends 1-3 Times/Wk	49	48	45	49	47	47
					See Friends 3+ Times/Wk	33	18	19	33	32	31
N	279	552	4067	4898	N	816	867	259	250	13159	15101

Cells show percentages, unless otherwise indicated

Table 3: Regression of Maternal Health Behaviors on Generational Status and Race/Ethnicity, FFS and MCS*

FFS	Prenatal Smoking (B)	Prenatal Drinking (B)	Early Prenatal Care (B)	Breastfed (B)	Smoking around Child (5)	Binge Drinking (5)
Foreign-Born	-1.374**	-0.552*	-0.111	1.451**	-1.171*	-1.121*
	(0.27)	(0.26)	(0.19)	(0.20)	(0.48)	(0.52)
Hispanic	-1.572**	-0.872**	-0.217†	-0.137	-1.521**	0.0771
	(0.13)	(0.17)	(0.13)	(0.12)	(0.22)	(0.18)
Hispanic, Foreign-Born	-1.592**	-0.0502	0.630**	0.449†	-0.535	-0.437
	(0.46)	(0.35)	(0.24)	(0.25)	(0.72)	(0.65)
Black	-1.080**	-0.395**	-0.179	-0.555**	-0.379**	-0.906**
	(0.10)	(0.12)	(0.11)	(0.10)	(0.14)	(0.17)
Other	-0.898**	-0.889*	-0.385†	-0.056	-0.396	-0.330
	(0.26)	(0.35)	(0.23)	(0.24)	(0.41)	(0.42)
Intercept	-0.774**			-0.0093	-0.407	-1.132**
	(0.20)			(0.20)	(0.30)	(0.37)
Cut Point 1		3.066**	0.908**			
		(0.24)	(0.20)			
Cut Point 2		4.687**	2.675**			
		(0.26)	(0.21)			
N	4897	4897	4897	4897	2859	4117
Model Type	L	OL	OL	L	L	L

MCS	Prenatal Smoking (B)	Prenatal Drinking (B)	Early Prenatal Care (B)	Breastfed (B)	Smoking around Child (5)	Binge Drinking (5)
Foreign-Born	0.0333	0.0752	0.0947	0.778**	-0.0458	-0.379**
	(0.12)	(0.09)	(0.11)	(0.12)	(0.15)	(0.08)
South Asian	-2.277**	-2.079**	-0.0120	1.333**	-1.366**	-3.076**
	(0.20)	(0.20)	(0.12)	(0.13)	(0.24)	(0.13)
South Asian, For. Born	-1.973**	-2.012**	-0.0112	-0.597**	-0.0556	-0.892**
	(0.39)	(0.45)	(0.18)	(0.20)	(0.32)	(0.21)
Black	-0.279†	-0.570**	-0.247	1.878**	-0.370†	-0.738**
	(0.16)	(0.15)	(0.16)	(0.22)	(0.22)	(0.13)
Black, For. Born	-2.642**	-0.481†	0.0603	0.0769	-1.829**	-1.285**
	(0.38)	(0.25)	(0.25)	(0.37)	(0.47)	(0.21)
Other	-.0726	-0.462†	-0.502*	1.808**	-0.133	-1.282**
	(0.29)	(0.25)	(0.25)	(0.41)	(0.37)	(0.21)
Other, For. Born	-2.612**	-1.260**	0.545†	-0.284	-1.679**	-0.710**
	(0.47)	(0.34)	(0.32)	(0.50)	(0.56)	(0.27)
Intercept	0.143			-0.0713	-0.673**	
	(0.16)			(0.15)	(0.20)	
Cut Point 1		-1.176**	-4.044**			-1.466**
		(0.17)	(0.17)			(0.14)
Cut Point 2		2.018**	-0.796**			-0.300**
		(0.17)	(0.15)			(0.14)
Cut Point 3		2.715**				0.576**
		(0.18)				(0.14)
Cut Point 4		4.400**				2.016**
		(0.18)				(0.14)
N	15060	15060	15060	15060	13381	13381
Model Type	L	OL	OL	L	L	OL

*Models also control for maternal education, family income, maternal age at birth and child's sex. (B)= birth; (5)=age5. Reference category in both samples is white native mothers.

Table 4A: Predicted Probability of Maternal Health Behaviors, by Nativity and Race/Ethnicity: FFS

	Prenatal Smoking (B)	Heavy Prenatal Drinking (B)	Prenatal Care First Trimester (B)	Breastfed (B)	Smoke around Child 1+ Hours/Day (5)	Binge Drinking (5)
1: Gross Model						
U.S. Born Non-Hispanic	0.264	0.027	0.817	0.527	0.187	0.0682
Foreign-Born Non-Hispanic	0.0834	0.0158	0.8	0.826	0.0667	0.0233
Foreign-Born Hispanic	0.0038	0.0063	0.858	0.867	0.0091	0.0141
2: Add Household Comp.						
U.S. Born Non-Hispanic	0.250	0.0266	0.82	0.526	0.186	0.0664
Foreign-Born Non-Hispanic	0.0882	0.0171	0.783	0.811	0.07	0.0244
Foreign-Born Hispanic	0.0042	0.0063	0.856	0.868	0.0088	0.0143
3: Add Instrumental Support						
U.S. Born Non-Hispanic					0.1854	0.0652
Foreign-Born Non-Hispanic					0.0685	0.0233
Foreign-Born Hispanic					0.0086	0.014
4: Add Social Integration						
U.S. Born Non-Hispanic					0.184	0.0651
Foreign-Born Non-Hispanic					0.0698	0.0441
Foreign-Born Hispanic					0.0087	0.0163

*Probabilities computed from parameters shown in Table 3A. All other covariates held constant at their means.

Table 4B: Predicted Probability of Maternal Health Behaviors, by Nativity and Race/Ethnicity: MCS

	Prenatal Smoking (B)	Prenatal Drinking 3+ Times/Wk (B)	Prenatal Care First Trimester (B)	Breastfed (B)	Smoking around Child (5)	Drink 3+ Times/Wk. (5)
1: Gross Model						
U.K. Born White	0.227	0.0191	0.778	0.672	0.127	0.186
Foreign-Born White	0.233	0.0206	0.791	0.817	0.122	0.135
Foreign-Born S. Asian	0.0044	0.0003	0.79	0.902	0.0324	0.003
Foreign-Born Black	0.0162	0.0074	0.759	0.969	0.0152	0.0202
Foreign-Born Other	0.0203	0.0037	0.801	0.953	0.0221	0.0208
2: Add Household Comp.						
U.K. Born White	0.212	0.0188	0.78	0.674	0.121	0.185
Foreign-Born White	0.234	0.0204	0.793	0.814	0.123	0.135
Foreign-Born S. Asian	0.0074	0.0004	0.776	0.893	0.043	0.003
Foreign-Born Black	0.0138	0.0071	0.776	0.970	0.0147	0.0192
Foreign-Born Other	0.0137	0.0038	0.774	0.952	0.0271	0.021
3: Add Instrumental Support						
U.K. Born White					0.121	0.183
Foreign-Born White					0.123	0.135
Foreign-Born S. Asian					0.0427	0.0031
Foreign-Born Black					0.0146	0.0208
Foreign-Born Other					0.0269	0.0221
4: Add Social Integration						
U.K. Born White					0.12	0.181
Foreign-Born White					0.122	0.133
Foreign-Born S. Asian					0.0427	0.0032
Foreign-Born Black					0.0148	0.0219
Foreign-Born Other					0.0266	0.0223

*Probabilities computed from parameters shown in Table 3B. All other covariates held constant at their means.

Table 5A: Latent Growth Curve Model of Maternal Inputs, Nativity and Race/Ethnicity: FFS

	Smoking (1)		**Binge Drinking (2)**	
	Intercept	Slope	Intercept	Slope
Intercept	0.00	0.295**	0.00	0.026
		(0.09)		(0.19)
Foreign-Born Non-Hispanic	-2.972**	0.074	-0.55	-0.36
	(0.63)	(0.15)	(0.57)	(0.25)
Hispanic	-2.309**	-0.019	-0.128	0.049
	(0.29)	(0.06)	(0.24)	(0.09)
Hispanic, Foreign-Born	-1.868*	-0.035	-0.845	0.167
	(0.81)	(0.20)	(0.68)	(0.29)
Black	-2.219**	0.041	-0.949	-0.072
	(0.24)	(0.05)	(0.22)	(0.09)
Other	-0.372	-0.311**	-1.186	0.181
	(0.57)	(0.13)	(0.63)	(0.23)
Threshold 1	0.00		2.839**	
	(0.48)		(0.48)	
Threshold 2	3.795**			
	(0.48)			
Threshold 3	7.194**			
	(0.51)			
Log Likelihood	-5835.16		-2332.46	
BIC	11957.65		4935.82	
N	3675		3675	
Model Type	OL		L	

*All models also control for child sex, maternal age at birth, maternal education and family income.

†<.10; * p<.05 ; ** p <.01

Table 5B: Latent Growth Curve Model of Maternal Inputs, Nativity and Race/Ethnicity: MCS

	Smoking (1)		Frequency of Drinking (2)	
	Intercept	Slope	Intercept	Slope
Intercept	0.00	-0.289**	0.00	0.437**
		(0.08)		(0.04)
Foreign-Born White	0.019	-0.066	-0.096	-0.121**
	(0.13)	(0.06)	(0.09)	(0.03)
South Asian	-1.891**	-0.057	-3.117**	-0.403**
	(0.19)	(0.08)	(0.15)	(0.05)
South Asian, For. Born	-0.857**	0.170	-1.590**	0.090
	(0.27)	(0.12)	(0.26)	(0.07)
Black	-0.228	-0.181*	-0.818**	-0.070†
	(0.19)	(0.09)	(0.15)	(0.04)
Black, For. Born	-3.095**	-0.004	-1.233**	-0.165**
	(0.43)	(0.18)	(0.24)	(0.07)
Other	0.196	-0.075	-0.844**	-0.207**
	(0.31)	(0.14)	(0.24)	(0.07)
Other, For. Born	-2.726**	0.082	-1.724**	0.101
	(0.45)	(0.20)	(0.32)	(0.09)
Threshold 1	0.375*		0.040	
	(0.19)		(0.16)	
Threshold 2			1.328**	
			(0.16)	
Threshold 3			2.537**	
			(0.16)	
Threshold 4			4.820**	
			(0.17)	
Log Likelihood	-18839.05		-68579.58	
BIC	38029.66		137539.23	
N	13381		13381	
Model Type	L		OL	

*All models also control for child sex, maternal age at birth, maternal education and family income.

†<.10; * p<.05 ; ** p <.01

Table 6A: Regression of Maternal Health Behaviors on Nativity, Race/Ethnicity and Social Support: FFS*

	Add Household Composition						Add Instrumental Support		Add Social Integration	
	Prenatal Smoking (B)	Prenatal Drinking (B)	Early Prenatal Care (B)	Breastfed (B)	Smoking around Child (5)	Binge Drinking (5)	Smoking around Child (5)	Binge Drinking (5)	Smoking around Child (5)	Binge Drinking (5)
Foreign-Born	-1.237**	-0.451†	-0.229	1.353**	-1.114*	-1.047†	-1.129*	-1.074†	-1.099*	-0.411
	(0.28)	(0.26)	(0.19)	(0.20)	(0.48)	(0.54)	(0.48)	(0.56)	(0.48)	(0.55)
Hispanic	-1.501**	-0.935**	-0.165	-0.0580	-1.552**	-0.124	-1.516**	-0.110	-1.528**	-0.237
	(0.13)	(0.17)	(0.13)	(0.12)	(0.22)	(0.18)	(0.22)	(0.18)	(0.22)	(0.22)
Hispanic, Foreign-Born	-1.637**	-0.0695	0.662**	0.487*	-0.581	-0.421	-0.619	-0.407	-0.621	-0.786
	(0.46)	(0.35)	(0.24)	(0.22)	(0.72)	(0.65)	(0.72)	(0.65)	(0.72)	(0.69)
Black	-1.045**	-0.517**	-0.0634	-0.459**	-0.392**	-1.017**	-0.378*	-1.017**	-0.382*	-0.998**
	(0.10)	(0.13)	(0.11)	(0.10)	(0.15)	(0.18)	(0.15)	(0.18)	(0.15)	(0.21)
Other	-0.846**	-0.979**	-0.289	0.0535	-0.379	-0.384	-0.415	-0.326	-0.441	-0.570
	(0.26)	(0.35)	(0.23)	(0.24)	(0.41)	(0.42)	(0.41)	(0.42)	(0.41)	(0.52)
Household Comp.										
Married Bio	-1.178**	-0.581**	0.588**	0.467**	-0.0604	-0.639**	-0.0946	-0.683**	-0.0957	-0.707**
	(0.15)	(0.16)	(0.13)	(0.11)	(0.17)	(0.19)	(0.17)	(0.19)	(0.17)	(0.24)
Cohab. Bio	-0.0029	-0.288*	0.208*	0.0775	0.404*	-0.0527	0.350*	-0.0626	0.374*	0.0218
	(0.09)	(0.12)	(0.08)	(0.08)	(0.17)	(0.20)	(0.17)	(0.19)	(0.17)	(0.23)
Coresiding Non-Bio					0.436*	-0.138	0.412*	-0.142	0.417**	0.0071
					(0.14)	(0.18)	(0.14)	(0.18)	(0.14)	(0.21)
Grandmother in HH	0.0078	0.154	-0.182*	-0.132	0.0959	0.316†	0.108	0.315†	0.0946	0.455*
	(0.10)	(0.13)	(0.09)	(0.09)	(0.17)	(0.18)	(0.17)	(0.18)	(0.17)	(0.21)
Instrumental Support										
Rely for Housing							-0.412*	-0.116	-0.450*	0.131
							(0.17)	(0.23)	(0.17)	(0.27)
Rely for Child Care							0.129	-0.195	0.125	-0.421
							(0.20)	(0.25)	(0.20)	(0.28)
Rely for Money							0.090	0.179	0.090	0.198
							(0.17)	(0.22)	(0.17)	(0.26)
Social Integration										
Have Close Friends									0.0902	0.137
									(0.20)	(0.29)
Feel Alone									0.330†	0.476†
									(0.20)	(0.26)
Know Most Neighbors									0.364**	-0.147
									(0.12)	(0.18)
Intercept	-1.185**			0.0703	-0.656*	-1.189**	-0.592†	-1.110*	-0.781*	-1.123*
	(0.22)			(0.21)	(0.31)	(0.39)	(0.35)	(0.45)	(0.38)	(0.56)
Cut Point 1		3.070**	-0.997**							
		(0.27)	(0.22)							
Cut Point 2		4.698**	2.770**							
		(0.28)	(0.23)							
N	4897	4897	4897	4897	2859	4117	2859	4117	2859	4117
Model Type	L	OL	OL	L	L	L	L	L	L	L

*Models also control for maternal education, family income, maternal age at birth and child's sex. (B)= birth; (5)=age5

Table 6B: Regression of Maternal Health Behaviors on Nativity, Race/Ethnicity and Social Support: MCS*

	Add Household Composition						Add Instrumental Support		Add Social Integration	
	Prenatal Smoking	**Prenatal Drinking**	**Early Prenatal Care**	**Breastfed**	**Age 5 Smoking around Child**	**Age 5 Freq. of Drinking**	**Age 5 Smoking around Child**	**Age 5 Freq. of Drinking**	**Age 5 Smoking around Child**	**Age 5 Freq. of Drinking**
Foreign-Born	0.125	0.0844	0.0812	0.754**	0.0213	-0.373**	0.0192	-0.362**	0.0182	-0.370**
	(0.12)	(0.09)	(0.10)	(0.12)	(0.15)	(0.08)	(0.15)	(0.08)	(0.15)	(0.08)
South Asian	-1.749**	-1.966**	-0.0949	1.222**	-1.103**	-3.062**	-1.106**	-3.048**	-1.090**	-2.983**
	(0.20)	(0.21)	(0.12)	(0.13)	(0.23)	(0.13)	(0.23)	(0.13)	(0.23)	(0.13)
South Asian, For. Born	-1.990**	-2.009**	-0.0114	-0.581**	-0.0348	-0.873**	-0.0402	-0.861**	-0.0454	-0.879**
	(0.39)	(0.45)	(0.17)	(0.19)	(0.31)	(0.21)	(0.31)	(0.21)	(0.31)	(0.21)
Black	-0.475**	-0.597**	-0.121	2.020**	-0.481*	-0.775**	-0.486*	-0.747**	-0.478*	-0.690**
	(0.16)	(0.15)	(0.15)	(0.22)	(0.22)	(0.13)	(0.22)	(0.13)	(0.22)	(0.13)
Black, For. Born	-2.616**	-0.488†	-0.0430	-0.0103	-1.759**	-1.299**	-1.764**	-1.251**	-1.749**	-1.232**
	(0.38)	(0.25)	(0.22)	(0.36)	(0.47)	(0.21)	(0.47)	(0.21)	(0.47)	(0.21)
Other	-0.0209	-0.451†		1.811**	-0.210	-1.288**	-0.206	-1.284**	-0.171	-1.228**
	(0.29)	(0.25)		(0.41)	(0.37)	(0.22)	(0.37)	(0.22)	(0.37)	(0.22)
Other, For. Born	-2.551**	-1.256**		-0.301	-1.407**	-0.693**	-1.418*	-0.652**	-1.458*	-0.676**
	(0.47)	(0.35)		(0.50)	(0.56)	(0.27)	(0.56)	(0.27)	(0.56)	(0.27)
Household Comp.										
Married Bio	-1.090**	0.209**	0.429**	0.453**	0.629**	-0.185**	0.632**	-0.187**	0.601**	-0.170**
	(0.07)	(0.07)	(0.07)	(0.06)	(0.07)	(0.05)	(0.07)	(0.05)	(0.07)	(0.05)
Cohabiting Bio	-0.253**	-0.0634	0.238**	0.285**	-0.0425	-0.250**	-0.0444	-0.250**	-0.0212	-0.241**
	(0.07)	(0.07)	(0.07)	(0.06)	(0.08)	(0.06)	(0.08)	(0.06)	(0.08)	(0.06)
Non-Bio Father					0.0716	-0.187*	0.0701	-0.187*	0.0870	-0.165*
					(0.11)	(0.08	(0.11)	(0.08	(0.11)	(0.08
Grandparent in HH	-0.291**	-0.309**	-0.234**	-0.249**	-0.119	-0.225*	-0.121	-0.207*	-0.121	-0.205*
	(0.09)	(0.09)	(0.08)	(0.08)	(0.14)	(0.09)	(0.14)	(0.09)	(0.14)	(0.09)
Instrumental Support										
Money from Grandpar.							0.0022	0.206**	0.0069	0.202**
							(0.07)	(0.04)	(0.07)	(0.04)
Source of Support							-0.062	0.0142	-0.0592	0.0025
							(0.06)	(0.04)	(0.06)	(0.04)
Social Integration										
Friends with Neighbors									-0.138	0.0569
									(0.08)	(0.06)
Friends Closeby									0.0595	-0.0167
									(0.08)	(0.05)
Friends 1-3 Times/Wk									-0.133*	0.287**
									(0.05)	(0.04)
Friends 3+ Times/Wk									0.137†	0.381**
									(0.07)	(0.05)
Intercept	0.470*			-0.160	-0.499*		-0.469*		-0.422†	
	(0.17)			(0.16)	(0.20)		(0.22)		(0.22)	
Cut Point 1		1.017**	-3.923**			-1.609**		-1.448**		-1.167**
		(0.18)	(0.17)			(0.14)		(0.15)		(0.15)
Cut Point 2		1.862**	-0.690**			-0.440**		-0.277**		0.0122
		(0.18)	(0.15)			(0.14)		(0.14)		(0.15)
Cut Point 3		2.561**				0.439**		0.603**		0.896**
		(0.18)				(0.14)		(0.14)		(0.15)
Cut Point 4		4.249**				1.880**		2.046**		2.3342**
		(0.18)				(0.14)		(0.15)		(0.16)
N	15060	15060	15060	15060	13381	13381	13381	13381	13381	13381
Model Type	L	OL	OL	L	L	OL	L	OL	L	OL

*Models also control for maternal education, family income, maternal age at birth and child's sex.