The Complexity of Immigrant Generations: Implications for Assessing the Socioeconomic Integration of Hispanics and Asians

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January 2012

Abstract

Much of the socioeconomic mobility achieved by U.S. immigrant families takes place across rather than within generations. When assessing the long-term integration of immigrants, it is therefore important to analyze differences not just between the foreign-born and U.S-born, but also across generations of the U.S.-born. Because of data limitations, however, virtually all studies of the later-generation descendants of immigrants rely on subjective measures of ethnic self-identification rather than arguably more objective measures based on the countries of birth of the respondent and his ancestors. In this context, biases can arise from "ethnic attrition" (e.g., U.S.-born individuals who do not self-identify as Hispanic despite having ancestors who were immigrants from a Spanish-speaking country). Analyzing 1994-2010 data from the Current Population Survey (CPS), we present evidence that such ethnic attrition is sizeable and selective for the second- and third-generation populations of key Hispanic and Asian immigrant groups. In addition, our results suggest that ethnic attrition generates measurement biases that vary across national origin groups in direction as well as magnitude, and that correcting for these biases is likely to raise the socioeconomic standing of the U.S.-born descendants of most Hispanic immigrants relative to their Asian counterparts. Finally, although changes to the CPS Hispanic origin and race questions adopted in 2003 have substantially lowered attrition rates for second- and third-generation Hispanics and Asians, ethnic attrition remains a significant issue even with the improved questionnaire.

I. Introduction

Recent research highlights the complexity of immigrant generations in the United States. Varying ages at immigration, interethnic marriage, and marriage between co-ethnics of different generations create a wide variety of marital unions, and the particular configuration influences the ethnic attachments and socioeconomic attainment of the children produced by these marriages (Jensen 2001; Ramakrishnan 2004; Rumbaut 2004). Within the first generation, for example, there are fundamental differences between immigrants who arrive as children (the so-called "1.5 generation") and those who arrive as adults, with much of the contrast attributable to advantages that child arrivals enjoy in learning English and from attending school in the United States (Oropesa and Landale 1997; Rumbaut 2004; Bleakley and Chin 2004, 2010). Similarly, members of the second generation with one U.S.-born and one foreign-born parent have different experiences and often display favorable socioeconomic outcomes compared to their peers with two foreign-born parents, and the extent of these differences sometimes depends upon whether it is the second-generation member's father or mother who is the U.S. native (Portes and Rumbaut 2001; Ramakrishnan 2004; Rumbaut 2004).

Related research emphasizes how generational complexity shapes racial/ethnic attachment and identification, and how the resulting "attrition" can generate potentially serious problems for tracking the socioeconomic progress of later-generation descendants of U.S. immigrant groups (Perlmann and Waters 2007; Alba and Islam 2009; Lee and Bean 2010). Our own previous work demonstrates the salience of these issues for the specific case of Mexican Americans (Duncan and Trejo 2007, 2009, 2011). Analyzing microdata from the Current Population Survey (CPS) for children living with both parents, in Duncan and Trejo (2011) we compare an objective indicator of Mexican descent (based on the countries of birth of the child,

his parents, and his grandparents) with the standard subjective measure of Mexican identification (based on the response to the Hispanic origin question). Immigrant generations turn out to be quite complex, and this complexity is closely related to children's subjective Mexican identification. For example, only 17 percent of third-generation Mexican children have a majority of their grandparents born in Mexico. Moreover, third-generation children are virtually certain of being identified as Mexican if three or four grandparents were born in Mexico, whereas rates of Mexican identification fall to 79 percent for children with two grandparents born in Mexico and 58 percent for children with just one Mexican-born grandparent. Overall, about 30 percent of third-generation Mexican children are *not* identified as Mexican by the Hispanic origin question in the CPS, and this ethnic attrition is highly selective. In particular, the high school dropout rate of third-generation Mexican youth (ages 16 and 17) is 25 percent higher when the sample is limited to those youth subjectively identified as Mexican. Therefore, our previous research suggests that ethnic attrition is substantial among third-generation Mexicans and could produce significant downward bias in standard measures of attainment which rely on subjective ethnic identification rather than objective indicators of Mexican descent.

Measurement issues of this sort potentially loom large in assessments of immigrant assimilation. Historically, much of the socioeconomic mobility achieved by U.S. immigrant families has taken place across rather than within generations (Neidert and Farley 1985; Borjas 1994; Perlmann 2005). When evaluating the long-term integration of immigrants, it is therefore important to analyze differences not just between the foreign-born and U.S-born, but also across generations of the U.S.-born (Farley and Alba 2002; Card 2005; Smith 2006). The ideal data set for such an analysis would include information about the family tree of each individual, enabling us to identify which individuals have ancestors who immigrated to the United States from a

particular country and how many generations have elapsed since that immigration took place. Information of this sort would also allow us to characterize the complexity of each individual's immigrant roots in some detail, accounting for factors such as the specific national origins of an individual's immigrant ancestors, whether the same national origins show up on both the paternal and maternal sides of the family tree, and how far removed from the current generation are the immigrant ancestors. Unfortunately, the large, nationally-representative data sources typically employed to study U.S. immigrants and their descendants provide only very limited information pertaining to immigrant generations. Microdata sources such as the decennial Census, the American Community Survey (ACS), and the CPS report each respondent's country of birth, thereby distinguishing foreign-born individuals (i.e., the first generation) from the U.S.-born population. Only the CPS, however, currently collects information about the countries of birth of each respondent's parents, which allows the second generation (i.e., U.S.-born individuals who have at least one foreign-born parent) to be differentiated from higher generations of U.S.-born individuals. Moreover, none of these surveys provide information about the countries of birth of an adult respondent's grandparents, so studies of immigrant descendants beyond the second generation are forced to identify the population of interest using subjective measures of ethnic identification (e.g., third- and higher-generation Mexicans are U.S.-born individuals who have U.S.-born parents and who self-identify as Mexican in response to the Hispanic origin question).

In this context, measurement biases arising from selective ethnic identification could distort assessments of the socioeconomic attainment and integration of later-generation descendants of immigrants. The current paper explores this issue for a wide range of national origin groups from important Hispanic (Mexico, Puerto Rico, Cuba, El Salvador, and the

Dominican Republic) and Asian (China, India, Japan, Korea, and the Philippines) source countries. Using microdata from recent years of the CPS, we delineate the strong links between generational complexity and ethnic identification. In addition, we analyze the extent and selectivity of ethnic attrition among first-, second-, and third-generation members of each of these immigrant groups, and we provide some evidence on the consequent biases in standard measures of attainment that almost always rely on subjective ethnic identification for immigrant descendants in the third generation and beyond.

Our paper contributes to existing research in several ways. First, because of data limitations, previous work on the complexity of immigrant generations has focused on the first and second generations (Oropesa and Landale 1997; Ramakrishnan 2004; Rumbaut 2004). We develop an empirical strategy that enables us to extend this type of analysis to the third generation, something we do not believe has been done before in a systematic fashion. Second, recent research on ethnic attrition among immigrant descendants considers only a few national origin groups, primarily Cubans (Rumbaut 2004) and Mexicans (Alba and Islam 2009; Duncan and Trejo 2011).[1] We compare a number of key immigrant groups, including several Asian national origin groups. These comparisons turn out to be interesting and important, as the extent of ethnic attrition varies widely across groups, and the educational selectivity of such attrition tends to run in the opposite direction for Hispanics and Asians. In addition, our research

[1] Closely related to this work, however, is the influential literature on ethnic attachment and identification among descendants of the European immigrants who arrived in the United States around the turn of the twentieth century. After a few generations, so much intermarriage had taken place between these immigrant groups that most white Americans could choose among multiple ancestries or ethnic identities, creating measurement issues of the type that we consider here for Hispanic and Asian groups (Alba 1986, 1990; Waters 1990; Hout and Goldstein 1994). In particular, Perlmann (2010) documents the complexity of ethnic origins for several generations of the descendants of German immigrants. Also relevant is research demonstrating how selective identification can affect measures of socioeconomic attainment for non-immigrant groups such as American Indians. Shifts in self-identification appear to account for much of the surprisingly large increase in educational attainment observed for American Indians between the 1970 and 1980 U.S. Censuses (Eschbach, Supple, and Snipp 1998). In addition, Snipp (1989) shows that those who report American Indian as their race have considerably lower schooling and earnings, on average, than the much larger group of Americans who report a non-Indian race but claim to have some Indian ancestry.

contributes to the broader literature that investigates the determinants of ethnic identification (Alba 1990; Waters 1990). Until recently, analyses of ethnic responses in large U.S. surveys have focused mainly on whites of European descent (Alba and Chamlin 1983; Lieberson and Waters 1988, 1993; Farley 1991). Our paper adds to the emerging literature that studies racial/ethnic identification among immigrant and minority groups (e.g., Hong and Min 1999; Waters 1999; Bailey 2001; Morning 2001; Landale and Oropesa 2002; Qian 2004; Itzigsohn, Giorguli, and Vazquez 2005; Brown, Hitlin, and Elder 2006; Perez 2008; Tovar and Feliciano 2009; Lee and Bean 2010).

Labor economists have long been interested in tracking socioeconomic progress across immigrant generations (Chiswick 1977; Borjas 1992, 1994; Card, DiNardo, and Estes 2000; Trejo 2003; Smith 2006), and our study has potentially significant implications for this work. Finally, our paper also contributes to an emerging literature within economics that explicitly recognizes the complexity of ethnic identification and has begun to investigate the consequences of this complexity for labor market outcomes and policy.[2] In particular, economic models emphasize the potential endogeneity of identity and suggest mechanisms through which ethnic identification could be associated with both observed and unobserved characteristics of individuals. To date, however, most empirical work in the relevant economics literature has focused on immigrants. The analysis presented here demonstrates that some of the same issues can apply to native-born members of ethnic and minority groups. In addition, we emphasize the complications that intergenerational shifts in ethnic identify can create for measuring the socioeconomic progress of later-generation descendants of immigrants.

[2] Examples include Akerlof and Kranton (2000); Bisin and Verdier (2000); Bisin, Topa, and Verdier (2004); Mason (2004); Austen-Smith and Fryer (2005); Darity, Mason, and Stewart (2006); Constant and Zimmermann (2009); Manning and Roy (2010); and Bisin, Patacchini, Verdier, and Zenou (2011). Zimmermann (2007) and Bisin and Verdier (2011) survey some of the relevant literature.

The paper is organized as follows. The next section describes the data and our approach to defining immigrant generations and measuring ethnic attrition. Section III presents an analysis of the extent and selectivity of ethnic attrition for first- and second-generation adults from the relevant Hispanic and Asian national origin groups, and Section IV provides a similar analysis for third-generation children. In Section V, we discuss major changes to the CPS Hispanic origin and race questions introduced in January 2003 and the impact of these changes on ethnic identification and ethnic attrition. A final section summarizes and concludes.

II. Data

We use microdata from the CPS for all months from January 1994 through December 2010. The CPS is a monthly survey of 50,000-60,000 households that the U.S. government administers to estimate unemployment rates and other indicators of labor market activity. In addition to the detailed demographic and labor force data reported for all respondents, the CPS collects earnings information each month from one-quarter of the sample, the so-called "outgoing rotation groups." The data we analyze come from these outgoing rotation group samples. The CPS sampling scheme is such that selected residences are surveyed for four consecutive months (e.g., January through April), then leave the sample for eight months (e.g., May through December), and return for a final four months (e.g., January through April of the following year) before exiting the sample for good. The outgoing rotation groups in a given month include those residences that will rotate out of the sample in the following month, either temporarily (i.e., those residences completing their fourth month in the CPS sample) or permanently (i.e., those residences being surveyed for the eighth and final time). To avoid samples with repeated observations for a given household, we use only data from the first time a

residence appears in an outgoing rotation group (i.e., we use only data from the fourth month that a residence appears in the CPS sample). By pooling together these 17 years of monthly CPS data, we substantially increase sample sizes and improve the precision of our estimates. A key feature of CPS data is their inclusion (beginning in 1994) of the information about parental countries of birth that is currently missing from the Census and ACS. As a result, the CPS is now the best large-scale, nationally-representative U.S. data set for investigating how outcomes vary by immigrant generation.

Throughout this paper, we define immigrant generations using information on the countries of birth of the respondent, his parents, and (when possible, as described below) his grandparents. The first generation consists of foreign-born individuals (excluding those born abroad of an American parent). The second generation includes U.S.-born individuals who have at least one foreign-born parent. The third generation denotes U.S.-born individuals with two U.S.-born parents but at least one foreign-born grandparent. These immigrant generations are defined separately for each of the specific Hispanic and Asian source countries that we consider. The Hispanic source countries are Mexico, Puerto Rico, Cuba, El Salvador, and the Dominican Republic, and the Asian source countries are China, India, Japan, Korea, and the Philippines.[3] So, for example, a first-generation Cuban is someone who was born in Cuba and immigrated to the United States, and a second-generation Japanese is a U.S.-born individual whose father and/or mother were born in Japan. For second- and third-generation individuals, the source country samples defined in this way can overlap somewhat. A U.S.-born individual with a father

[3] These particular countries were chosen because they are important sources of U.S. immigration and they yield CPS samples of reasonable size for all three generations. Persons born in Puerto Rico are U.S. citizens and enjoy unfettered mobility between the island and the U.S. mainland, and therefore Puerto Ricans are not, strictly speaking, a U.S. "immigrant" group. Nonetheless, island-born Puerto-Ricans who move to the United States and their U.S.-born descendants encounter many of the same adjustment issues as conventional immigrant groups. Accordingly, the socioeconomic mobility of Puerto Ricans is often analyzed using models and methods developed to study U.S. immigrant groups (e.g., Feliciano 2001; Hirschman 2001).

born in Mexico and a mother born in El Salvador, for example, will appear in the second-generation samples for both Mexico and El Salvador.[4]

The approach described above assigns national origins using the specific countries of birth of the respondent and his ancestors. In contrast, data limitations commonly force researchers to adopt an alternative approach whereby self-reported race/ethnicity is used to approximate the national origins of immigrant groups, especially for individuals beyond the first generation (e.g., in Census or ACS data, second- and higher-generation Asians are U.S.-born individuals who subjectively identify as Asian in response to the race question). A central aim of the current paper is to investigate the accuracy of these approximations. For this purpose, we examine the subjective racial/ethnic identification of individuals whose immigrant generation and national origins can be determined from the information available in the CPS regarding the countries of birth of themselves and their ancestors. For individuals linked to Hispanic source countries, we examine whether they subjectively identify as Hispanic in response to the Hispanic origin question in the CPS.[5] For individuals linked to Asian source countries, we examine

[4] The overlap in samples is typically quite small. For our samples of second-generation adults, the percentage who also appear in one of the other nine source country samples is below 5 percent for all countries except Cuba (8 percent) and the Dominican Republic (20 percent). For our samples of third-generation children, the percentage who also appear in another source country sample is below 10 percent for all countries except Puerto Rico (11 percent), Cuba (16 percent), and the Dominican Republic (42 percent). Most of the overlap for Cubans and Dominicans arises from intermarriage between these groups and Puerto Ricans.

[5] Since January 2003, the CPS has collected information about Hispanic origin as follows. Respondents are asked whether they are "Spanish, Hispanic, or Latino," and those who answer affirmatively are then asked to designate a specific Hispanic national origin group (Mexican, Puerto Rican, Cuban, Central/South American, or Other Spanish). The Hispanic origin question in the 2000 U.S. Census is similar (Grieco and Cassidy 2001). Prior to 2003, the CPS elicited Hispanic origin by asking respondents to choose their "origin or descent" from a list of about 20 possibilities that included responses such as "Italian," "Polish," and "Afro-American," in addition to the specific Hispanic national origin groups listed above (Bowler *et al.* 2003). Responses for the specific Hispanic groups were coded and reported separately in the public use data files, along with a residual category that combined into a single group all of the non-Hispanic responses.

In this paper, we employ the broad indicator of "Hispanic" ethnic identification that potentially applies to all of the Hispanic national origin groups. In previous work that focused on Mexicans (Duncan and Trejo 2007, 2009, 2011), we employed the specific indicator for "Mexican" ethnic identification. In CPS data, the "Hispanic" indicator captures all those who designate a specific national origin (such as Mexican, Puerto Rican, or Cuban) as well those who identify as Hispanic but fail to indicate a specific national origin. Therefore, the results reported here may understate the amount of ethnic attrition that would be relevant when a particular Hispanic national origin group is the focus of analysis.

whether they subjectively identify as Asian in response to the race question in the CPS.[6]

To improve the reliability of our measures of subjective racial/ethnic identification, we exclude individuals with imputed information regarding Hispanic origin (for analyses of Hispanic source countries) or race (for analyses of Asian source countries). By doing so, we avoid confounding true ethnic attrition with errors generated by the CPS imputation process. To more accurately assign immigrant generations, we exclude individuals with missing or imputed information regarding the country of birth of themselves or any relevant ancestors. In particular, we exclude all individuals with missing or imputed information regarding their own country of birth. When constructing samples for the second and third generations, we also exclude individuals with missing or imputed information regarding the country of birth of either parent, and when defining the third generation, we further exclude individuals with missing or imputed information regarding the country of birth of any grandparent.

In the empirical analyses that follow, we study ethnic attrition among first-, second-, and third-generation members of important Hispanic and Asian national origin groups. We also investigate whether such ethnic attrition is selective with respect to educational attainment. In the interests of clarity and transparency, we present our results using simple comparisons of identification rates and average years of schooling. We have performed the corresponding regression analyses that control for a number of additional factors, including age, gender, geographic location, survey month/year, and who in the household responded to the CPS survey. Controlling for these additional factors does not alter the basic pattern of results that we report

[6] Unlike the Census and ACS, the CPS race question does not identify specific Asian national origin groups (e.g., Chinese, Japanese, Korean, etc.). Prior to 2003, the relevant race category in the CPS was "Asian or Pacific Islander." Starting in January 2003, "Asian" and "Hawaiian/Pacific Islander" become separate categories, and respondents can identify with more than one race category (Bowler *et al.* 2003). For the sake of comparability with the earlier data, from 2003 on we consider individuals to identify as Asian if they respond to the CPS race question with "Asian" or ""Hawaiian/Pacific Islander" (or both), even if they also give other (i.e., non-Asian) race responses. Treating multiple race responses in this way will produce conservative estimates of ethnic attrition. In Section V below, we discuss how the 2003 changes in the CPS questionnaire affected Hispanic and Asian identification.

here in a more straightforward fashion. The reported calculations do not employ the CPS sampling weights, because these weights are constructed using the information on subjective racial/ethnic identification that we treat as endogenous (U.S. Bureau of the Census 2006). Nevertheless, weighted calculations produce similar results.

III. First- and Second-Generation Adults

We begin by considering adults between the ages of 25 and 59 who are first- or second-generation members of the relevant national origin groups. Tables 1 (for Hispanic source countries) and 2 (for Asian source countries) document heterogeneity within immigrant generations that has important implications for ethnic identification. The top half of each table provides information for the first generation, including the percentage who arrived in the United States as children (i.e., below the age of 16), and how ethnic identification rates vary with age at arrival. The bottom half of each table presents similar information for the second generation; namely, the percentage distribution of whether it is the individual's father, mother, or both who was born in the relevant country, and how ethnic identification varies with parental origins. In both tables, standard errors of the identification rates are shown in parentheses, and samples sizes are listed by generation for each national origin group.

Analyzing data from the 2000 U.S. Census, Rumbaut (2006, Table 2-3) reports a very strong correspondence between country of birth and subjective ethnic identification for Hispanic immigrants. Our CPS samples confirm this finding and reveal a similar pattern for Asian immigrants. Overall rates of Hispanic or Asian identification exceed 95 percent for first-generation adults from all national origin groups except Dominicans (90 percent) and Indians (92 percent). As discussed below in Section V, the relatively low rate of Hispanic identification by

Dominican immigrants can be attributed to the indirect way in which the CPS solicited information about Hispanic origin prior to 2003. From 2003 forward, the revised Hispanic origin question produces an identification rate of 98 percent for first-generation Dominicans.[7] Although rates of ethnic identification for immigrants are generally quite high regardless of their age at arrival in the United States, for most national origin groups the rates are somewhat lower among those who arrived before the age of 16.[8] This pattern is most pronounced for immigrants from India and Japan, but it also evident among first-generation individuals from Puerto Rico, Cuba, El Salvador, and China.[9] The lower rates of ethnic identification for immigrants who arrived as children might reflect more rapid assimilation due to their earlier exposure to the English language and U.S. schools, neighborhoods, and other socializing institutions (Oropesa and Landale 1997; Bleakley and Chin 2004, 2010).

We did not expect to find much ethnic attrition in the first generation, so we are not surprised by the high rates of Hispanic and Asian identification among foreign-born adults from the relevant source countries. Ethnic identification rates for the first generation do provide an important baseline, however, for measuring ethnic attrition in the second and third generations. The fact that immigrants from these Hispanic and Asian countries consistently choose the

[7] For immigrants from India, one possibility is that their relatively low rate of Asian identification reflects confusion with the CPS race category of "American Indian" (Morning 2001). Although this category is intended for Native Americans, some Asian Indians might mistakenly think it refers to them. Of the first-generation Indians in our sample who do not self-identify as Asian, however, only 12 percent instead identify as "American Indian," and therefore this explanation can account for at most a small portion of the observed ethnic attrition. Among those first-generation Indians who do not self-identify as Asian, the overwhelming majority instead report their race as "white," a pattern that is even stronger for second- and third-generation Indians.

[8] In estimating age at arrival in the United States for foreign-born individuals, we use the available information regarding the individual's current age, their year of U.S. arrival, and the survey year. The CPS reports year of U.S. arrival in intervals ranging from two to five years in length, and so we employ the midpoints of these intervals when calculating age at arrival.

[9] Our first-generation samples exclude those born abroad of an American parent, so the relatively low rate of Asian identification among persons born in Japan who came to the United States before the age of 16 is unlikely to be driven by children born to U.S. military personnel stationed in Japan. Without this exclusion, however, the Asian identification rate is below 40 percent for those who were born in Japan and arrived in the United States as children.

expected response suggests that they generally understand the CPS Hispanic origin and race questions and do not have difficulty locating where they fit within the implied racial/ethnic configuration. This finding for the first generation also increases the likelihood that any significant decline in subjective identification observed for later generations represents true ethnic attrition rather than confusion with the CPS questionnaire or unfamiliarity with the U.S. racial/ethnic structure.

The bottom panels of Tables 1 and 2 provide information on generational complexity and ethnic identification for second-generation adults from the same Hispanic and Asian national origin groups. These second-generation members are U.S.-born individuals who have at least one parent born in the relevant source country. Every national origin group exhibits a statistically significant reduction in ethnic identification between the first and second generations. By the second generation, overall rates of Hispanic or Asian identification are below 83 percent for all national origin groups except Mexicans (95 percent) and Puerto Ricans (89 percent). Identification rates are especially low for second-generation adults from El Salvador (22 percent), India (63 percent), and Japan (67 percent).

To highlight these patterns, Figure 1 graphs the overall ethnic attrition rates for first- and second-generation adults from each national origin group. The ethnic attrition rate represents the percentage of individuals who do *not* subjectively identify as Hispanic or Asian (whichever would be expected for their national origin group). As such, the ethnic *attrition* rates displayed in Figure 1 are complements of the corresponding ethnic *identification* rates reported in Tables 1 and 2 (i.e., the ethnic attrition rate equals 100 minus the ethnic identification rate).[10] Figure 1 makes clear the sharp rise in ethnic attrition that occurs between the first and second generations

[10] The standard error of an ethnic attrition rate is identical to the standard error of the corresponding ethnic identification rate. Therefore, Tables 1 and 2 provide standard errors for the ethnic attrition rates shown in Figure 1.

for every national origin group, and it also shows that for most groups sizeable rates of ethnic attrition (approaching 20 percent or more) emerge as early as the second generation. Evidently, the ethnic attrition we studied previously for second-generation Mexicans (Duncan and Trejo 2011) is just the tip of the iceberg, as other second-generation groups have substantially higher rates of attrition.

Tables 1 and 2 also demonstrate that the structure of ethnic origins varies enormously across second-generation groups. For example, the percentage of second-generation adults with both parents rather than just one parent born in the source country ranges from 67 percent for Puerto Ricans and 63 percent for Indians down to 15 percent for Japanese and 13 percent for Salvadorans. The corresponding rate is 39 percent for Koreans and close to 50 percent for the remaining five groups. Moreover, generational complexity is strongly related to subjective ethnic identification. For all second-generation groups, rates of ethnic identification are much lower for individuals with just one parent born in the source country. Indians and Salvadorans provide the most extreme examples of this pattern, with ethnic identification being the norm for those with two parents born in the source country (rates of 86 percent for Indians and 76 percent for Salvadorans) but uncommon for those with just one parent born in the source country (26 percent for Indians and 14 percent for Salvadorans).

Figure 2 displays the corresponding ethnic attrition rates for second-generation adults, distinguished by whether both parents, only the father, or only the mother was born in the source country. These graphs reaffirm the relatively low ethnic attrition rates for second-generation adults with both parents born in the relevant country, but they also reveal interesting patterns among second-generation adults with mixed parental origins (the so-called 2.5 generation). For second-generation Hispanics with only one parent born in the source country, ethnic attrition

rates are similar regardless of whether that parent is the father or the mother. This is not the case for Asian national origin groups, however, with generally much less ethnic attrition among those second-generation adults whose father rather than mother was born in the relevant country (Koreans are the lone exception, as they exhibit the opposite pattern). Moreover, Tables 1 and 2 document important differences between national origin groups in the chances that second-generation individuals have immigrant fathers or immigrant mothers (or both). As a result, the wide variation across groups both in generational complexity and in rates of ethnic identification conditional on parental origins generates the substantial differences we observe in the overall percentage of second-generation adults who identify with the relevant ethnic group.

We have shown that, despite uniformly high rates of ethnic identification for first-generation adults, several of the Hispanic and all of the Asian national origin groups studied here exhibit significant amounts of ethnic attrition in the second generation. We have also shown that this ethnic attrition primarily reflects much lower rates of ethnic identification for those individuals with only one parent (rather than both) born in the source country. For ethnic attrition to distort standard measures of generational progress for immigrant groups, however, it is not enough that such attrition be sizeable; the attrition must also be selective on socioeconomic attainment. To provide some initial evidence on the selectivity of ethnic attrition, Table 3 reports average completed years of schooling by ethnic identification for second-generation adults from each of our Hispanic and Asian national origin groups. Standard errors are shown in parentheses.

Table 3 reveals an interesting pattern in how the educational selectivity of ethnic attrition varies across second-generation groups. For Mexicans and Puerto Ricans, groups with the lowest average schooling levels, adults not identified as Hispanic tend to be much better

educated than those who do identify as Hispanic. In particular, second-generation Puerto Ricans who fail to identify as Hispanic average almost three-quarters of a year more education than their counterparts who do so identify, and the analogous schooling gap for second-generation Mexicans approaches a full year. Precisely the opposite pattern, however, emerges for the most educated groups: Chinese and Indians. Within these groups, education levels are significantly lower for second-generation adults who do not provide the expected Asian identification. Finally, groups with intermediate levels of education tend to exhibit little or no selectivity by ethnic identification (e.g., Cubans, Dominicans, and Filipinos).

Our previous research for Mexicans (Duncan and Trejo 2007, 2011) suggests that selective ethnic attrition causes most analyses to understate the socioeconomic attainment of the U.S.-born descendants of Mexican immigrants, because this population usually must be identified by their subjective responses to questions about ethnic origins. Table 3 indicates that a similar conclusion holds for Puerto Ricans and Salvadorans. On the other hand, Table 3 reveals the reverse bias for most Asian groups (with Filipinos being the notable exception), which suggests that ethnic attrition inflates observed schooling levels for the U.S.-born descendants of Asian immigrants. This pattern is of theoretical as well as empirical interest. Some theories of interethnic marriage (e.g., Furtado 2006, 2011) predict that members of high-attainment groups who intermarry should be negatively selected in terms of attainment, whereas the corresponding selectivity should be positive for intermarried members of low-attainment groups.[11] The pattern

[11] Furtado's model emphasizes how the supplies of potential spouses vary with ethnic-specific schooling distributions in marriage markets where individuals hope to match on both education and ethnicity. A college-educated Mexican American, for example, may choose to intermarry because of the relative scarcity of other Mexican ethnics with a college degree. Asian Americans tend to be overrepresented on college campuses, however, so for these groups it may instead be the less-educated individuals that face a more difficult time finding co-ethnics to marry within their education group. Consequently, this model predicts that members of high-education groups who intermarry should be negatively selected in terms of education, whereas the selectivity should be positive for intermarried members of low-education groups. Because intermarriage is a fundamental source of ethnic attrition, the differences across groups in intermarriage selectivity predicted by Furtado's model can generate corresponding differences in the selectivity of ethnic attrition.

of educational selectivity evident in Table 3 is broadly consistent with this prediction, given that ethnic attrition is more likely for children produced by intermarriages (Lieberson and Waters 1988; Duncan and Trejo 2007, 2009, 2011).

IV. Third-Generation Children

By matching second-generation individuals in the CPS with their spouses and children, we can push this analysis one step further and learn something about complexity and ethnic attrition in the third generation. For children living with both parents, the survey data collected from the parents reveal the countries of birth of each child's grandparents. With this information, we can now formulate a more precise definition of the third generation, as opposed to the standard definition that relies on subjective racial/ethnic identification and does not distinguish the true third generation from higher generations. Our third-generation samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents (ages 18 and above) but at least one grandparent born in the relevant source country.[12] We limit the samples to children in married, intact families because complete information regarding grandparents' countries of birth is available only for children living in the same household as both of their parents.

At the outset, let us acknowledge some important limitations of our analysis of third-generation children. First, because we must restrict attention to children in married, intact families, our samples are not representative of all third-generation children. Available evidence suggests that endogamy is more prevalent in marriage than in cohabitation and in out-of-wedlock childbearing, so restricting our samples to married, intact families is likely to understate the

[12] Our samples of third-generation children include siblings from the same set of parents. When we avoid repeated observations within families by retaining only the youngest child from each family, sample sizes fall by roughly half, but the results remain very similar to those reported below using the full samples.

extent of ethnic attrition. After reviewing the relevant literature, Perlmann and Waters (2004, p. 275) conclude that "formal marriage and the children born in wedlock provide us with a conservative view of the degree of intermixing—both in terms of interethnic couples and in terms of the production of mixed-ancestry children."

Second, the analyses we report do not distinguish children with step or adoptive parents from those with biological parents. Not until 2007 does the CPS collect the information necessary to make such distinctions. Using only the data from 2007 forward, we find that for most national origin groups around 10 percent of the third-generation children in our samples have at least one non-biological parent, with the rates ranging from under 2 percent for Chinese and Indians to 17 percent for Salvadorans. When we limit our analyses to children with two biological parents, rates of Hispanic and Asian identification typically rise, but only modestly (i.e., by a few percentage points), and the educational selectivity of ethnic attrition does not change.

Third, we base our measures of subjective ethnic identification for third-generation children on their responses to the CPS Hispanic origin and race questions, but these responses primarily represent a parent or other adult member of the household answering for the child. A critical issue is whether these children will give similar responses when they become adults and answer for themselves.[13] Fourth, because the CPS does not provide informative measures of attainment for children, we analyze the selectivity of ethnic attrition among third-generation children somewhat indirectly, by examining the education levels of their parents. Finally, for some of the national origin groups, the samples of third-generation children are small.[14] Note

[13] See Portes and Rumbaut (2001, chapter 7) for a discussion of parental and other influences on the evolving ethnic identities of second-generation adolescents.

[14] For example, third-generation sample sizes are 209 for Dominicans, 170 for Indians, and 269 for Koreans (see Table 4).

that none of these limitations apply to the analysis of ethnic attrition among first- and second-generation adults that we presented in the preceding section. Individuals born in a foreign country or with a foreign-born parent are likely to retain relatively strong ethnic attachments, however, so by focusing only on the first and second generations we would miss the more extensive ethnic attrition that may occur in later generations. Therefore, despite its limitations, we believe our analysis of ethnic attrition in the third generation provides a useful empirical glimpse into a potentially significant topic about which little is currently known.

For third-generation children from each of our Hispanic and Asian source countries, Table 4 reports information pertaining to generational complexity and its relationship to subjective ethnic identification. In particular, the table shows the percentage distribution of third-generation children by how many of their grandparents were born in the relevant country, and the table also indicates how the ethnic identification of these children varies with this indicator of generational complexity. For every national origin group, the vast majority of third-generation children have only one or two grandparents who were born in that country, rather than three or four. Almost 80 percent of Mexicans and Puerto Ricans, roughly 90 percent of Cubans, Dominicans, Chinese, and Filipinos, and an even greater percentage of third-generation children from the remaining national origin groups have no more than two immigrant grandparents from the relevant country. Note that this complexity of grandparents' origins has two sources: interethnic marriage, and marriage between different generations of the same ethnicity.[15] The only way that a third-generation Mexican child can have three or four of his grandparents born in Mexico, for example, is if both parents are second-generation Mexicans (i.e., the mother and father are both the U.S.-born children of Mexican immigrants). By contrast, if a second-

[15] Lichter, Carmalt, and Qian (2011) discuss the prevalence and implications of cross-generational marriage among Hispanics. Min and Kim (2009) do the same for Asians.

generation Mexican marries either a non-Mexican or a later-generation Mexican (i.e., a Mexican American from the third generation or beyond), then the children resulting from such a marriage can have at most two Mexican-born grandparents.

Table 4 shows that this generational complexity is closely related to children's subjective ethnic identification. Children with three or four grandparents born in the source country are very likely to report the corresponding ethnic identification, but identification rates are dramatically lower for the bulk of third-generation children who have only one or two immigrant grandparents and therefore weaker ethnic ties. Furthermore, for every national origin group, ethnic attrition is much greater for the third-generation children in Table 4 than for the first- and second-generation adults in Tables 1 and 2. Although this pattern is expected, the magnitude of ethnic attrition in the third generation is striking nonetheless. Except for the overall Hispanic identification rates of 81 percent for Mexicans and 70 percent for Dominicans, standard measures of ethnic identification capture less than two-thirds of the Hispanic and Asian children in our samples. Only 11 percent of the children with one or more grandparents born in El Salvador identify as Hispanic, and less than a third of the analogous Indian children identify as Asian, so analyses of the U.S.-born members of these groups using conventional Census and CPS data sets are likely to miss large segments of the target populations.

In Table 4, heterogeneity among third-generation children is measured by how many of their grandparents were born in the relevant country. Table 5 provides a somewhat different perspective on generational complexity, by distinguishing third-generation children according to whether their ethnicity derives from both the paternal and maternal sides of their family rather than just from one side. For example, we define a third-generation Mexican child to have Hispanic ethnicity on his father's side of the family if at least one of the following two things is

true: (1) the child has a paternal grandparent who was born in Mexico, or (2) the child's father self-identifies as Hispanic. In an analogous fashion, the countries of birth of the maternal grandparents and the mother's subjective ethnic identification determine whether a third-generation Mexican child has Hispanic ethnicity on his mother's side of the family. By construction, all of the children in our third-generation samples have at least one grandparent born in the source country, so they all have the relevant ethnicity on at least one side of their family. The issue is whether the CPS data give any indication that a child also has this ethnicity on the *other* side of his family. In this way, we distinguish third-generation children by whether they are the products of ethnic in-marriage (i.e., children with the relevant ethnicity on both sides of their family) or ethnic intermarriage (i.e., children with the relevant ethnicity on only one side of their family).

Table 5 shows that mixed ethnic origins are widespread among third-generation Hispanic and Asian children. Forty percent of Mexican children have Hispanic ethnicity on only one side of their family, and the corresponding proportion is well over half for every other national origin group, with particularly high rates for Koreans (84 percent), Salvadorans (90 percent), and Indians (92 percent). In general, mixed origins are more common for third-generation children from Asian compared to Hispanic national origin groups, with three Hispanic groups (Mexicans, Dominicans, and Puerto Ricans) exhibiting much lower prevalence of ethnic intermarriage than any of the Asian groups.

Table 5 also indicates that ethnic intermarriage is the primary source of ethnic attrition in the third generation. Among third-generation children with the relevant ethnicity on both sides of their family, ethnic identification rates exceed 90 percent for all national origin groups except Salvadorans (who have an identification rate of 74 percent). For every group, however, ethnic

identification rates are markedly lower for children whose ethnicity originates from just one side of their family. Among third-generation children of mixed ethnic origins, these identification rates range from a minimum of 4 percent for Salvadorans to a maximum of 55 percent for Mexicans, with rates of 37-52 percent for other Hispanic groups and 26-42 percent for Asian groups. This pattern is highlighted in Figure 3, which illustrates the corresponding rates of ethnic attrition. For third-generation children from every national origin group, ethnic attrition is low when both parents share the same ethnicity and strikingly higher when the parents come from different ethnic backgrounds. Clearly, the sizeable amount of ethnic attrition observed in our third-generation samples is concentrated among children who are the products of interethnic marriage.

In order to learn something about the selectivity of ethnic attrition for third-generation children, Table 6 shows how parental education varies with whether or not the child reports the relevant ethnic identification. The pattern of selectivity is similar to what we saw in Table 3 for second-generation adults. For the largest Hispanic groups (Mexicans, Puerto Ricans, and Salvadorans), third-generation children who do not identify as Hispanic enjoy advantaged backgrounds (i.e., fathers and mothers with more schooling, on average) compared to their peers who do identify as Hispanic. For all Asian groups except for Filipinos, however, the selectivity runs in the opposite direction. Consider, for example, third-generation children from India. Overall, these children's parents average about 16 years of education, but average parental education exceeds 17 years in the relatively small (31 percent of the total) and select subsample of Indian children who identify as Asian. As a result, the indicator for an Asian race response commonly employed in analyses of Census and CPS data captures a highly skewed sample of third-generation Indian Americans.

This selectivity (with respect to parental education) of ethnic attrition has two possible sources. First, because ethnic attrition predominately occurs among children who are the products of interethnic marriage, the educational selectivity of intermarriage is a potential source of parental education differences between third-generation children who do and do not provide the expected subjective identification. Second, within the subsample of intermarried families, ethnic identification of children might be selective on parental education. Table 7 sheds light on both the magnitude and the direction of these two sources of selectivity for each of the Hispanic and Asian national origin groups. The first source, intermarriage selectivity, is captured by differences in average parental education between children with the relevant ethnicity on only one side of their family and those with the relevant ethnic origins on both sides of their family. The second source, selective ethnic identification within intermarried families, is captured by how parental education varies with the child's subjective ethnic identification among those children who have the relevant ethnicity on just one side of their family.

Table 7 reveals interesting differences between Hispanics and Asians. For third-generation children from Hispanic national origin groups, the selectivity of ethnic attrition is driven primarily by the first source of selectivity (intermarriage selectivity), because the second source (selective ethnic identification within intermarried families) tends to be negligible. Moreover, intermarriage selectivity runs in the same direction (positive) for all Hispanic groups. For Asians, however, the patterns are more complicated, as both sources of selectivity are typically operative, and the direction of selectivity varies across national origin groups and sometimes differs between the two sources of selectivity for a given group.

For every Hispanic national origin group, Table 7 shows that average parental education is substantially higher for third-generation children with Hispanic ethnicity on just one side of

their family than for the corresponding children with Hispanic ethnicity on both sides of their family. In other words, the educational selectivity of intermarriage is positive for every Hispanic group. Furthermore, for every Hispanic group except Dominicans, average parental education does not vary much with the child's ethnic identification among those third-generation children with Hispanic ethnicity on just one side of their family.[16] For most Hispanic groups, in other words, ethnic identification within intermarried families is not selective on parental education. As a result, for Mexicans, Puerto Ricans, and Salvadorans, the overall positive educational selectivity of ethnic attrition observed in Table 6 derives from the positive educational selectivity of intermarriage. For these three Hispanic groups with relatively low levels of schooling, this positive educational selectivity of intermarriage is consistent with the theoretical predictions by Furtado (2006, 2011) that were discussed in the preceding section. In contrast, Table 6 shows that ethnic attrition among third-generation children is associated with little or no educational selectivity for Cuban mothers and Dominican fathers and with negative educational selectivity for Dominican mothers. In these cases, the positive educational selectivity of intermarriage is countered by a negative educational selectivity of non-Hispanic identification within intermarried families.

Different patterns emerge for third-generation children from Asian national origin groups. Table 7 indicates that the educational selectivity of intermarriage is positive for Chinese and Filipinos, but it is negative for Indians, Japanese, and Koreans. For every Asian group, however, the educational selectivity of non-Asian identification within intermarried families is strongly negative. In other words, within the subsample of third-generation children with Asian

[16] Cubans fit this pattern for father's education, but not for mother's education. For Cuban mothers and for Dominican parents of either sex, average parental education is lower for children who fail to identify as Hispanic (within the subsample of third-generation children with mixed ethnic origins). Therefore, for Cubans and Dominicans, there is some evidence that the educational selectivity of non-Hispanic identification is negative among intermarried families.

identification on only one side of their family, average parental education is markedly lower for children who fail to identify as Asian. This educational difference is particularly large among Indians, Japanese, and Koreans—the Asian groups for which the educational selectivity of intermarriage is negative—and so for these groups both sources of selectivity reinforce each other to produce the decidedly negative educational selectivity of ethnic attrition observed in Table 6. In contrast, for Chinese and Filipinos—the Asian groups that exhibit a positive educational selectivity of intermarriage—the two sources of selectivity work in opposite directions, resulting in an overall selectivity of ethnic attrition that is negative for Chinese and insignificant for Filipinos.

In general, patterns of ethnic attrition for third-generation children are similar to those for second-generation adults reported earlier. These similarities are reassuring, given that our analysis of third-generation children suffers from the limitations mentioned at the beginning of this section. Moreover, studying third-generation children has provided some new insights, in part because of the more detailed information about ethnic origins available for such children. First of all, ethnic attrition is much more prevalent in the third generation than in the second, an important though perhaps unsurprising finding. Second, both the source and the direction of selective ethnic attrition differ between Hispanics and Asians. For Hispanics, the educational selectivity of ethnic attrition is driven primarily by the selectivity of intermarriage. As predicted by Furtado (2006, 2011), the educational selectivity of intermarriage (and therefore of ethnic attrition) is strongly positive for the Hispanic groups with the lowest levels of education (Mexicans, Puerto Ricans, and Salvadorans). Intermarriage selectivity is also present for Asians, but it is not as important as the educational selectivity of non-Asian identification within intermarried families, which is negative for every Asian group. As a result, the educational

selectivity of ethnic attrition is negative for every Asian group except Filipinos. This finding for Asians—that third-generation children with better-educated parents tend to retain stronger ethnic ties—is consistent with the possibility of "selective acculturation" that the theory of segmented assimilation posits for some immigrant groups (Portes and Zhou 1993; Portes and Rumbaut 2001).

V. Impact of 2003 Changes in the CPS Questionnaire

As noted earlier (see footnotes 4 and 5), major changes to the CPS questions regarding Hispanic origin and race were introduced in the January 2003 survey (Bowler *et al*. 2003). In this section, we compare data from before and after these changes in order to assess their potential impacts on ethnic identification.

Prior to 2003, the CPS collected information on Hispanic origin in a rather indirect fashion. Respondents were asked to choose their "origin or descent" from a flash card listing about 20 options. Just over half of these options represented European ancestries (such as "German" or "Swedish"), another option was "Afro-American," and there was a residual category for "another group not listed." The remaining options were meant to capture Hispanics. Three separate options were available for those of Mexican descent ("Mexican-American," "Chicano," and "Mexican"), and the options for non-Mexican Hispanics included "Puerto Rican," "Cuban," "Central or South American (Hispanic Countries)," and "Other Hispanic." For our purposes, it is important to note that "Salvadoran" and "Dominican" were not listed explicitly as options. Presumably, Salvadorans were expected to choose the "Central or South American" option, and Dominicans were expected to choose "Other Hispanic." Starting in 2003, the CPS Hispanic origin question was changed to a format similar to that introduced in the 2000

U.S. Census and also adopted by the ACS. Respondents are now asked directly whether they are "Spanish, Hispanic, or Latino," and those who answer affirmatively are then given the opportunity to designate a specific national origin group (Mexican, Puerto Rican, Cuban, Central/South American, or Other Spanish).

Beginning in January 2003, the CPS race question also was changed to be similar to the 2000 Census race question. The most significant revision is that respondents can now choose more than one race, whereas previously only a single race response was allowed.[17] In addition, the ordering of the Hispanic origin and race items on the questionnaire was switched. Prior to the 2003 CPS (or the 2000 Census), the race question preceded the Hispanic origin question. Now, the Hispanic origin question precedes the race question.[18]

We anticipate that these changes to the CPS questionnaire will raise ethnic identification and lower ethnic attrition for our samples of Hispanic and Asian national origin groups. The revised Hispanic origin question now directly asks about "Spanish, Hispanic, or Latino" ethnicity, which could improve identification for all Hispanic national origin groups, because the pre-2003 version of this question was not clear about its intent to identify Hispanics. We might expect to see the largest jumps in Hispanic identification for groups such as Salvadorans and Dominicans that were not listed explicitly as options in the previous version of the Hispanic origin question. The revised race question allows for multiple responses, which could increase Asian identification among multiracial Asians who previously may have given a non-Asian response when they were forced select a single race. Because Asians have relatively high rates of multiracial identification (Jones and Symens Smith 2001), their answers to the race question

[17] In contrast, the Hispanic origin question continues to permit only a single response. For example, respondents are not allowed to indicate that they are both "Mexican" and "Puerto Rican".

[18] To a large extent, the changes to the race question in the CPS echo the revisions that had been made to the corresponding question in the 2000 Census. See Grieco and Cassidy (2001) for a discussion of the race and Hispanic origin questions in the 2000 Census.

might be particularly sensitive to permitting multiple responses.[19]

For three groups with large enough samples to produce reasonably precise estimates by CPS survey year, Figure 4 illustrates the noticeable impact of the 2003 questionnaire changes on ethnic attrition. For each group, Figure 4 plots ethnic attrition rates calculated separately by survey year, with these annual rates displayed as dots.[20] The dashed vertical line distinguishes rates from before and after the CPS questionnaire changes that were introduced at the start of 2003, and the solid horizontal lines represent average ethnic attrition rates for the relevant "pre" (1994-2002) and "post" (2003-2010) regimes.

The top panel of Figure 4 shows ethnic attrition rates for first-generation Dominican adults. Under the pre-2003 version of the CPS Hispanic origin question, annual rates of ethnic attrition for Dominican immigrants range from 12 to 30 percent, with an average of about 18 percent. After the 2003 changes to the Hispanic origin question, however, the corresponding annual rates never exceed 4 percent, and the average ethnic attrition rate drops to 2 percent. Evidently, the questionnaire changes have raised Hispanic identification and lowered ethnic attrition among first-generation Dominicans, and by a substantial amount. Under the revised Hispanic origin question, ethnic attrition becomes negligible for U.S. immigrants from the Dominican Republic, notwithstanding several factors—such as phenotype, language, and home country conceptions of race/ethnicity quite different from those in the United States—that complicate ethnic identification for Dominicans (Bailey 2001; Itzigsohn, Giorguli, and Vazquez

[19] Using the CPS data from 2003 and later, we can calculate the percentage of individuals who answer the race question with multiple responses that include both Asian and non-Asian responses. This measure of the multiracial Asian population provides an indication of the extent to which Asians in our samples might have been affected by the pre-2003 requirement to select a single race. For second-generation adults from Asian national origin groups, the proportion of multiracial Asians ranges from 4 percent for Indians and 7 percent for Chinese to just over 20 percent for Japanese and Koreans. For third-generation children, the corresponding rates are substantially higher, ranging from 26 percent for Indians to 40 percent for Koreans.

[20] Recall that the ethnic attrition rate equals 100 minus the corresponding ethnic identification rate.

2005).[21] Among first-generation adults, Dominicans are the only national origin group to exhibit such a dramatic shift in ethnic identification before and after the 2003 changes in the CPS questionnaire. Only two other first-generation groups show statistically significant movement in the average rate of ethnic attrition before and after the questionnaire changes, and for these groups the declines in ethnic attrition are more modest (for Salvadorans, the rate of ethnic attrition falls from 5 percent before 2003 to 2 percent afterward, and the corresponding reduction for Indians is from 11 to 7 percent).

The middle panel of Figure 4 displays a similar graph for second-generation Puerto Rican adults who have only one of their parents (rather than both) born in Puerto Rico. Because the rate of ethnic attrition is only 4 percent (see Figure 2) among second-generation adults with both parents born in Puerto Rico, we choose to focus here on those with mixed parental origins for whom ethnic attrition is more prevalent. Once again, we see a discernible reduction in ethnic attrition after the CPS questionnaire changes are introduced in 2003. From 1994-2002, the annual rates of ethnic attrition for second-generation adults with just one parent born in Puerto Rico vary between 28-39 percent, whereas from 2003-2010 the comparable range is 12-26 percent. The average rate of ethnic attrition is cut in half, falling from 34 percent before 2003 to 17 percent from 2003 forward.

The bottom panel of Figure 4 tells a similar story for third-generation Mexican children with Hispanic ethnicity on just one side of their family.[22] The average rate of ethnic attrition

[21] Our findings for Dominican immigrants corroborate the corresponding results in del Pinal and Schmidley (2005), who matched respondents from the 2000 CPS (for the months of February through May) with the information that these same individuals provided in the 2000 U.S. Census (conducted in April). With their matched sample, del Pinal and Schmidley can compare how these individuals answered the Hispanic origin and race questions in both the 2000 CPS (which employed the earlier version of these questions) and the 2000 Census (which introduced the significant changes to these questions described above). Among those born in the Dominican Republic, the rate of Hispanic identification was much higher when responding to the 2000 Census (94 percent) than to the 2000 CPS (79 percent).

[22] Third-generation Mexican children with Hispanic ethnicity on both sides of their family have an ethnic attrition rate of only 2 percent (see Figure 3), and this rate is very similar before and after the 2003 changes in the CPS questionnaire.

plunges from 62 percent during 1994-2002 down to 28 percent in the 2003-2010 data, with annual rates that do not stray too far from the relevant average in each time period. Indeed, the *lowest* annual rate of ethnic attrition observed in the pre-2003 period (55 percent in 1998) far exceeds the *highest* annual rate observed afterward (32 percent in 2007). The middle and bottom panels of Figure 4 indicate that, even for groups such as Puerto Ricans and Mexicans that were listed explicitly as options in the pre-2003 CPS Hispanic origin question, the more direct version of this question adopted in 2003 can substantially reduce ethnic attrition among second- and third-generation individuals with mixed parental origins.

The other groups of second- and third-generation individuals with mixed parental origins also experienced declines in ethnic attrition following the 2003 questionnaire changes, but smaller sample sizes make the annual estimates rather noisy for most of these groups. To provide an informative picture of the overall patterns, Figures 5 and 6 compare average rates of ethnic attrition before (1994-2002) and after (2003-2010) the CPS revision.[23] Figure 5 pertains to second-generation adults with only one parent born in the relevant country, and Figure 6 is for third-generation children with the relevant ethnicity on only one side of their family. The figures make clear that the 2003 changes to the CPS Hispanic origin and race questions produced pervasive impacts on Hispanic and Asian identification. For U.S.-born individuals with mixed parental origins from every one of our source country samples, the 2003 questionnaire changes reduce ethnic attrition. Among second-generation adults, these declines are particularly large for Salvadorans and Indians, the two groups with the highest initial rates of ethnic attrition. Among third-generation children, ethnic attrition falls by a substantial amount for every national origin group, with the biggest reductions occurring for Hispanic groups (except Salvadorans).

[23] Appendix Tables A.1, A.2, and A.3 report the ethnic identification rates that constitute the raw data for these figures, along with additional information such as standard errors, sample sizes, and the corresponding rates for other subgroups and for first-generation adults.

Figures 5 and 6 focus on individuals with mixed parental origins, because ethnic attrition predominately occurs in this population. For most national origin groups, ethnic attrition rates are close to zero for second-generation adults with both parents born in the relevant country (see Figure 2) and for third-generation children with the relevant ethnicity on both sides of their family (see Figure 3), and so for these groups there is not much scope for the CPS questionnaire changes to lower attrition (see Tables A.2 and A.3). For those groups, however, with sizeable attrition even among individuals whose ethnicity originates from both parents, the 2003 questionnaire changes did reduce ethnic attrition. For example, among second-generation adults with both parents born in the relevant country, ethnic attrition rates fell for Salvadorans (from 51 to 5 percent), Dominicans (from 21 to 5 percent), and Indians (from 20 to 12 percent). Similarly, among third-generation children with Hispanic ethnicity on both sides of their family, attrition rates declined for Puerto Ricans (from 11 to 4 percent), Salvadorans (from 42 to 0 percent), and Dominicans (from 17 to 0 percent).[24]

As mentioned previously, the most straightforward explanation for why the revised CPS race question increases Asian identification and thereby lowers ethnic attrition among Asian national origin groups is that, by recording multiple responses, the revised question picks up some multiracial Asians who previously gave a non-Asian response when they were forced select a single race. If this were the only way that the revised race question affected Asian identification, then the size of the multiracial Asian population provides a rough upper bound on how much the revised question can lower ethnic attrition among Asians. Using CPS data for 2003-2010, we can measure the prevalence of multiracial responses for each of our Asian groups (see footnote 18), and these measurements generally are consistent with the observed changes in

[24] See Tables A.2 and A.3.

ethnic attrition. For example, 22 percent of second-generation Korean adults give both Asian and non-Asian responses to the race question in the 2003-2010 CPS data, and this prevalence of multiracial Asian identification is high enough to potentially account for the 7 percentage point decline in the overall ethnic attrition rate for second-generation Koreans (from 26 percent in 1994-2002 to 19 percent in 2003-2010) following the CPS questionnaire changes. The only Asian national origin group to go against form is Indians. The rates of multiracial identification for second-generation Indian adults (4 percent) and third-generation Indian children (26 percent) are too low to explain the corresponding declines in overall ethnic attrition observed following the questionnaire changes: a 23 percentage point decline for second-generation adults (from 52 to 29 percent) and a 28 percentage point decline for third-generation children (from 88 to 60 percent). This finding suggests that aspects of the CPS questionnaire changes besides allowing multiple race responses may have had an impact on the propensity for Indians to identify as Asian.[25]

In this section, we have documented that the 2003 changes to the CPS Hispanic origin and race questions have produced substantially lower rates of ethnic attrition for second- and third-generation Hispanics and Asians.[26] By asking directly about Hispanic ethnicity and by allowing multiple race responses, the CPS now elicits higher rates of subjective ethnic identification among the descendants of Hispanic and Asian immigrants. Ethnic attrition remains a significant problem, however, even in the 2003-2010 CPS data derived from the improved questionnaire. In these data, overall rates of ethnic attrition remain sizeable for second-generation members of some Hispanics groups (16 percent for Cubans and 40 percent for

[25] We must caution, however, that our samples of second- and third-generation Indians are relatively small, and so estimates of these ethnic attrition rates are somewhat imprecise (see Tables A.2 and A.3).

[26] We also investigated whether these changes to the CPS questionnaire altered the educational selectivity of ethnic attrition. Although some of the estimates are imprecise, in general the patterns of selectivity are similar before and after the questionnaire changes, and these patterns conform to those described in Sections III and IV.

Salvadorans) and all Asian groups (approaching 20 percent for Chinese, Koreans, and Filipinos, and around 30 percent for Indians and Japanese). For third-generation children, the corresponding rates vary from 12 percent for Mexicans to over 60 percent for Salvadorans and Indians, with Cubans and the remaining Asian groups all in the 35-50 percent range.[27] Because the Hispanic origin and race questions introduced in the 2003 CPS are similar to the analogous questions employed in the Census and ACS from 2000 forward, the issues pertaining to subjective identification and selective ethnic attrition that we have explored here with CPS data will likely also be relevant for Census and ACS data. Unfortunately, the lack of information about parental countries of birth makes these issues difficult to study or address in the Census and ACS.

Studies of Hispanics and Asians often ignore variation across national origin groups and instead examine these populations as pan-ethnic aggregates. Indeed, analyses of Asian-American adults beyond the second generation typically have no other choice (e.g., Takei and Sakamoto 2011), because the CPS race question does not identify specific Asian national origin groups. As a way of summarizing our findings and highlighting some of the potential implications, Table 8 (for Hispanics) and Table 9 (for Asians) report rates of ethnic identification and levels of average education when our source country samples are pooled together to create pan-ethnic aggregates.[28] These results are presented separately by immigrant generation (i.e., first-generation adults, second-generation adults, and third-generation children) and by time

[27] See Tables A.2 and A.3.

[28] As noted previously, the samples of second-generation adults and third-generation children overlap somewhat across source countries, due to individuals with mixed origins (e.g., a third-generation child with one grandparent born in Puerto Rico and another grandparent born in the Dominican Republic). The aggregated, pan-ethnic samples of Hispanics constructed for Tables 8 count each individual only once, and so do the pan-ethnic samples of Asians constructed for Table 9 (although there remains a tiny amount of overlap between the Hispanic and Asian pan-ethnic samples, because of a few individuals with both Hispanic and Asian ancestry). Based on 2000 Census data, the five national origin groups we include here in our pan-ethnic Hispanic samples account for over three-quarters of the U.S. Hispanic population (Guzman 2001), and the analogous statement holds for the five national origin groups included in our pan-ethnic Asian samples (Barnes and Bennett 2002).

period (i.e., the entire span or our data, 1994-2010, as well as a split that distinguishes data from before and after the major changes to the Hispanic origin and race questions introduced in January 2003).

Using data from all available years (1994-2010), the first column of numbers in Table 8 shows that the aggregate ethnic identification rates for individuals from our five Hispanic source countries decline from 98 percent for first-generation adults to 87 percent for second-generation adults to 67 percent for third-generation children. The corresponding column in Table 9 documents an even steeper decline in ethnic identification for individuals from the five Asian source countries: from 96 percent for the first generation to 75 percent for the second and 50 percent for the third. Among the descendants of Hispanic immigrants, average schooling is markedly higher for those who do *not* self-identify as Hispanic, whereas the educational selectivity of ethnic attrition runs in the opposite direction for Asians. As a result, average years of education for the pan-ethnic Hispanic samples increase by about .1 for second-generation adults and .2-.3 for the parents of third-generation children when the samples are expanded to include the relevant individuals who do not identify as Hispanic. In contrast, expanding the pan-ethnic Asian samples in this way leads to *reductions* in average schooling levels that are similar in magnitude to the increases observed for Hispanics.

The remaining columns of Tables 8 and 9 illustrate at this aggregated level the impact of the 2003 changes in the CPS questionnaire. For Hispanics, rates of ethnic identification rise across the time periods before and after the questionnaire changes from 82 to 93 percent for second-generation adults and from 56 to 81 percent for third-generation children. For Asians, the corresponding increases are somewhat smaller, from 72 to 78 percent for second-generation adults and from 41 to 57 percent for third-generation children. The educational selectivity of

ethnic attrition remains similar before are after the questionnaire changes, but the reduced rates of ethnic attrition following these changes imply that measurement biases from subjective ethnic identification are less of a problem in the 2003 and later CPS data. Therefore, one lesson from this analysis is to avoid using, whenever possible, CPS data from before 2003 when studying immigrant generations. Another lesson is that, even in CPS data from 2003 and later, measurement biases from subjective ethnic identification may lead standard analyses to understate the socioeconomic attainment of the U.S.-born descendants of Hispanic immigrants and overstate the corresponding outcomes for Asian Americans.

VI. Conclusion

Because of data limitations, research on the U.S.-born descendants of Hispanic and Asian immigrants often must identify the populations of interest using subjective measures of racial/ethnic identification (Sakamoto, Wu, and Tzeng 2000; Snipp and Hirschman 2004; Zeng and Xie 2004; Saenz 2005; Duncan, Hotz, and Trejo 2006). In particular, this approach is typically the only feasible option for studies that seek to examine long-term integration by distinguishing immigrant descendants in the third and higher generations (Rong and Grant 1992; Borjas 1994; Trejo 1997, 2003; Goyette and Xie 1999; Farley and Alba 2002; Grogger and Trejo 2002; Yang 2004; Smith 2006; Blau and Kahn 2007). A potential problem with this approach is that assimilation and intermarriage can cause ethnic attachments to fade across generations (Alba 1990; Waters; 1990; Perlmann and Waters 2007), and therefore subjective measures of racial/ethnic identification might miss a significant portion of the later-generation descendants of immigrants. Furthermore, if such ethnic attrition is selective on socioeconomic attainment, then it can distort assessments of integration and generational progress.

Using 1994-2010 CPS data, we explore this issue for a wide range of national origin groups from important Hispanic (Mexico, Puerto Rico, Cuba, El Salvador, and the Dominican Republic) and Asian (China, India, Japan, Korea, and the Philippines) source countries. We measure ethnic attrition by analyzing the subjective racial/ethnic identification of individuals whose immigrant generation and national origins can be determined from the information available in the CPS regarding the countries of birth of themselves and their ancestors. For individuals linked to Hispanic source countries, we examine whether they subjectively identify as Hispanic in response to the Hispanic origin question, and for individuals linked to Asian source countries, we examine whether they subjectively identify as Asian in response to the race question. We conduct this analysis for three immigrant generations: first-generation adults (i.e., U.S. immigrants ages 25-59 who were born in the relevant source country), second-generation adults (i.e., U.S.-born individuals ages 25-59 who have at least one parent born in the relevant source country), and third-generation children (i.e., U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country).[29] So, for example, the ethnic attrition rate for second-generation Cubans represents the percentage who do *not* subjectively identify as Hispanic within our sample of U.S.-born adults with a parent born in Cuba.

We find little ethnic attrition in the first generation, which indicates that immigrants from these Hispanic and Asian countries generally understand the CPS Hispanic origin and race questions and consistently provide the expected responses. By the second generation, however, sizeable rates of ethnic attrition (approaching 20 percent or more) emerge for most groups, with lower rates for Mexicans (5 percent) and Puerto Ricans (11 percent). Attrition rates are

[29] In CPS data, complete information regarding grandparents' countries of birth is available only for children living in the same household as both of their parents, which is why our third-generation samples are limited to children in married, intact families.

dramatically higher for third-generation children, ranging from 19 percent for Mexicans and 30 percent for Dominicans to around 40 percent for Puerto Ricans and Chinese and close to 50 percent or more for the remaining groups (including rates of 69 percent for Indians and 89 percent for Salvadorans). Consequently, standard analyses that must rely on subjective racial/ethnic identification to detect the later-generation descendants of immigrants may miss large segments of the target populations. We also find that mixed ethnic origins are common among third-generation Hispanic and Asian children, and we demonstrate that ethnic attrition predominately occurs in children with mixed parental origins. Among third-generation children with the relevant ethnicity on both the paternal and maternal sides of their family, ethnic attrition rates are below 10 percent (and often well below) for all groups except Salvadorans (who have a rate of 26 percent). For every group, however, attrition is substantial among children whose ethnicity originates from only one side of their family (rates that range from 45-74 percent for nine of the ten groups, with a rate of 96 percent for Salvadorans).

In addition, we present evidence on the educational selectivity of ethnic attrition. Similar patterns of selectivity are observed for second-generation adults and third-generation children, but there are interesting differences between Hispanics and Asians.[30] For most Hispanic national origin groups, the educational selectivity of ethnic attrition is positive (i.e., average parental education is higher for third-generation children who do *not* subjectively identify as Hispanic), and this selectivity arises primarily because Hispanics who marry non-Hispanics tend to have higher education levels than Hispanics who marry endogamously. Conversely, the educational selectivity of ethnic attrition is negative for Asian groups (except Filipinos, who show no significant selectivity), and the principal source of this selectivity is that, within intermarried

[30] The CPS does not provide informative measures of attainment for children, so we analyze the selectivity of ethnic attrition among third-generation children by examining the education levels of their parents.

families, average parental education is markedly lower for children who fail to identify as Asian. This last finding for Asians—that third-generation children with better-educated parents retain stronger ethnic ties—is consistent with the possibility of "selective acculturation" that the theory of segmented assimilation posits for some immigrant groups (Portes and Zhou 1993; Portes and Rumbaut 2001). The overall pattern that the educational selectivity of intermarriage (and of ethnic attrition) tends to be positive for low-education Hispanic groups and negative for high-education Asian groups is consistent with Furtado's (2006, 2011) model of interethnic marriage. Regardless of the theoretical explanation, our empirical results suggest that ethnic attrition generates measurement biases that vary across national origin groups in direction as well as magnitude, and that correcting for these biases is likely to raise the socioeconomic standing of the U.S.-born descendants of most Hispanic immigrants relative to their Asian counterparts. Our results, however, shed more light on the direction rather than the ultimate magnitude of these measurement biases, and so at this point we cannot say whether correcting for selective ethnic attrition would produce a small or large improvement in the relative attainment of later-generation Hispanics.

Finally, we document that major changes to the CPS Hispanic origin and race questions adopted in 2003 have produced substantially lower rates of ethnic attrition for second- and third-generation Hispanics and Asians. By asking directly about Hispanic ethnicity and by allowing multiple race responses, the CPS now elicits higher rates of subjective ethnic identification among the descendants of Hispanic and Asian immigrants. Ethnic attrition remains a significant problem, however, even in CPS data collected using the improved questionnaire. In these data, overall rates of ethnic attrition remain sizeable for second-generation members of some Hispanics groups (Cubans and Salvadorans) and all Asian groups, and for these same groups the

corresponding rates among third-generation children exceed 35 percent. Because the Hispanic origin and race questions introduced in the 2003 CPS are similar to the analogous questions employed in the Census and ACS from 2000 forward, the issues pertaining to subjective identification and selective ethnic attrition that we have explored here with CPS data will likely also be relevant for Census and ACS data. Unfortunately, the lack of information about parental countries of birth makes these issues difficult to study or address in the Census and ACS.

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Figure 1: Ethnic Attrition Rates of First- and Second-Generation Adults

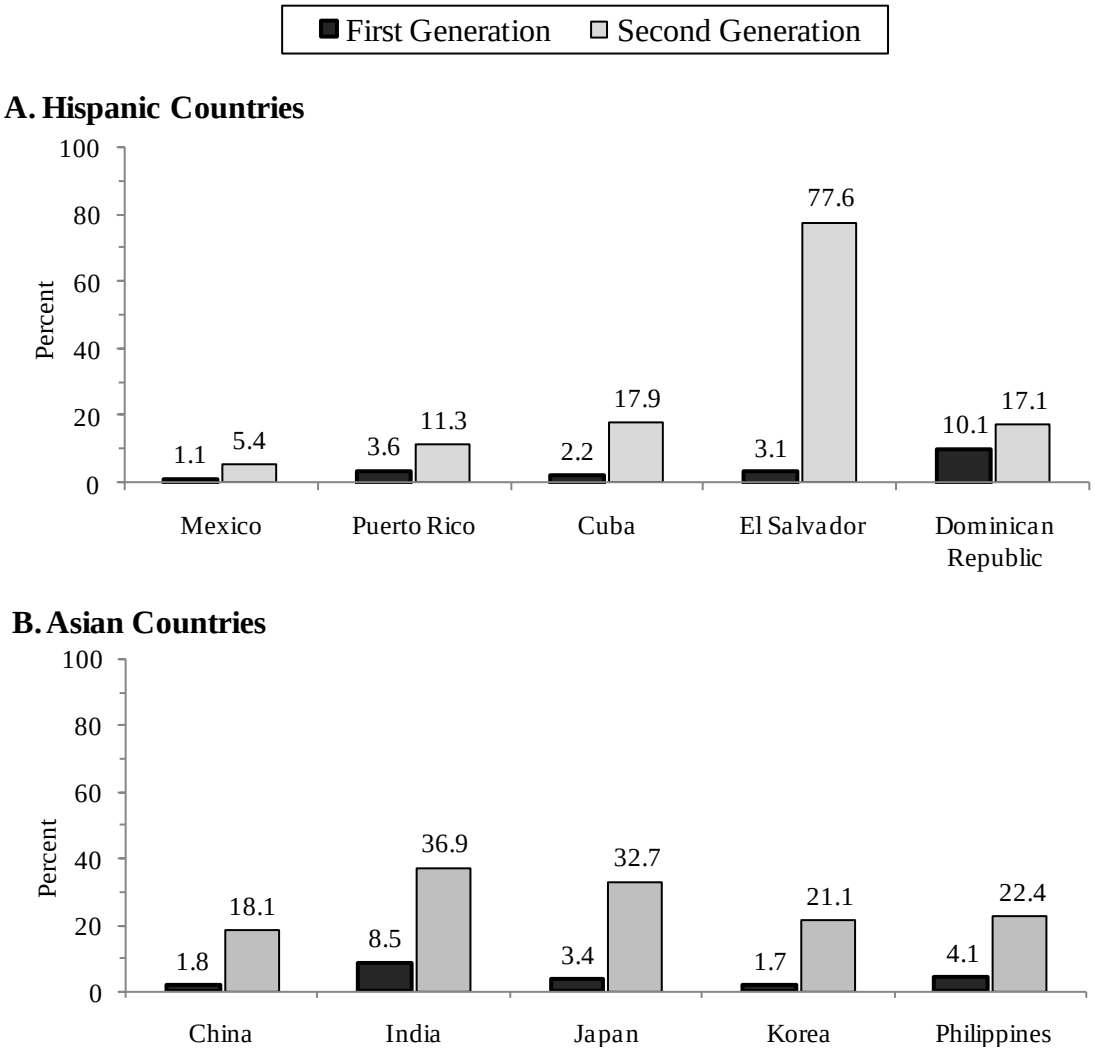


Figure 2: Ethnic Attrition Rates of Second-Generation Adults, by Parental Countries of Birth

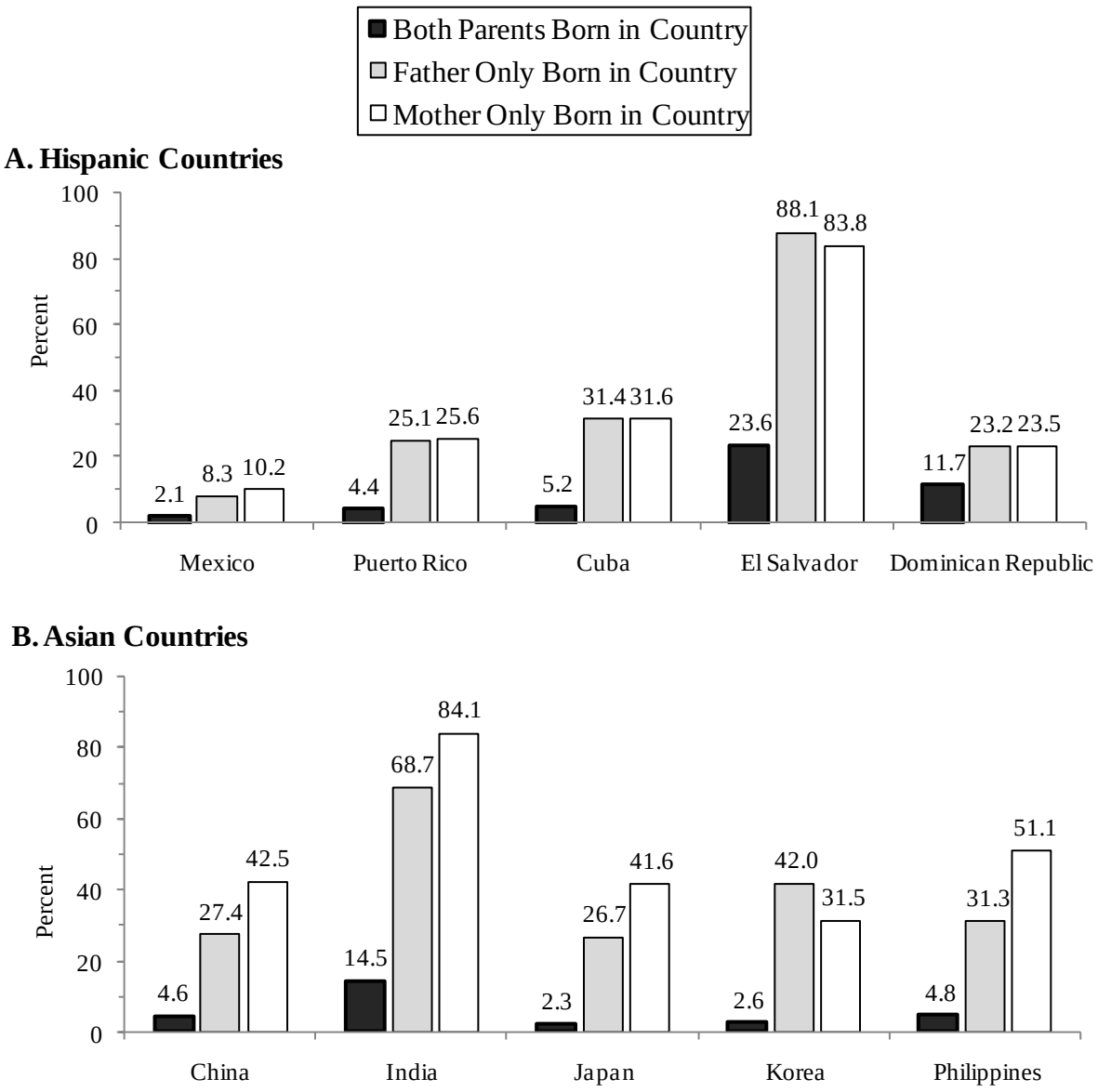


Figure 3: Ethnic Attrition Rates of Third-Generation Children, by Source of Ethnicity

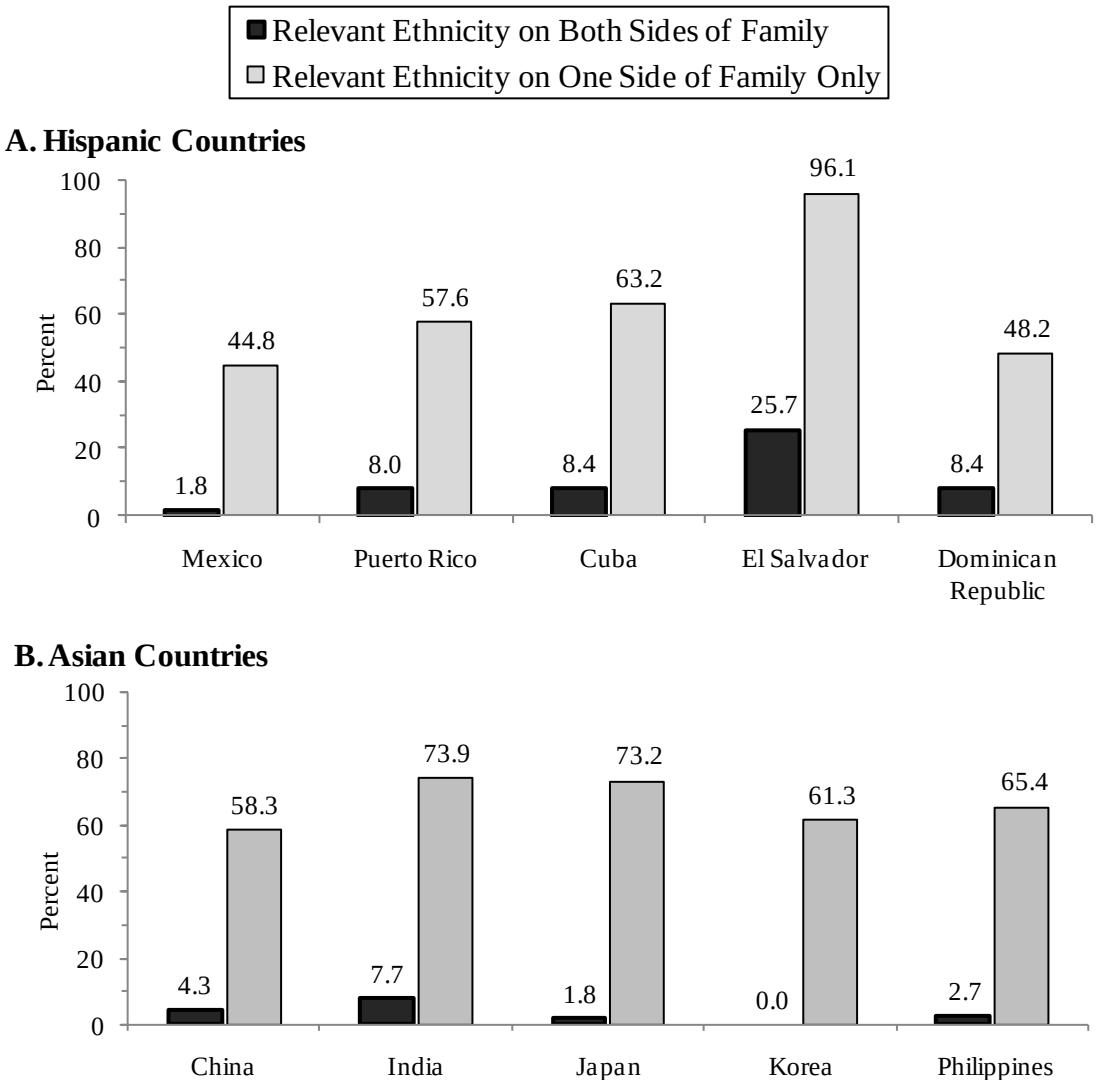
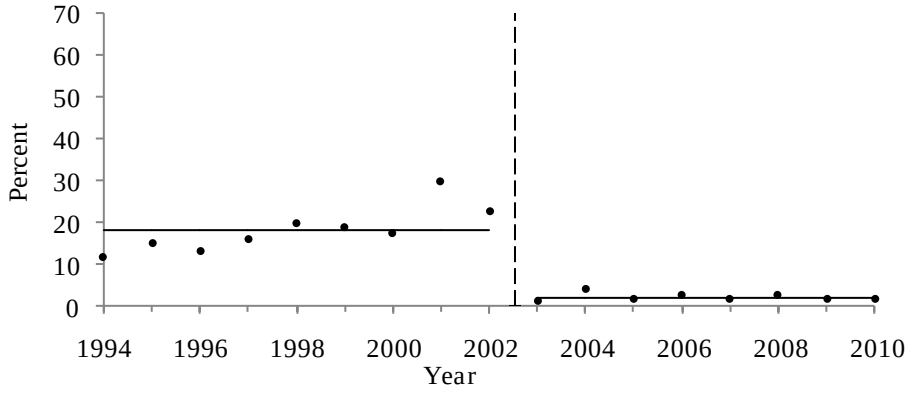
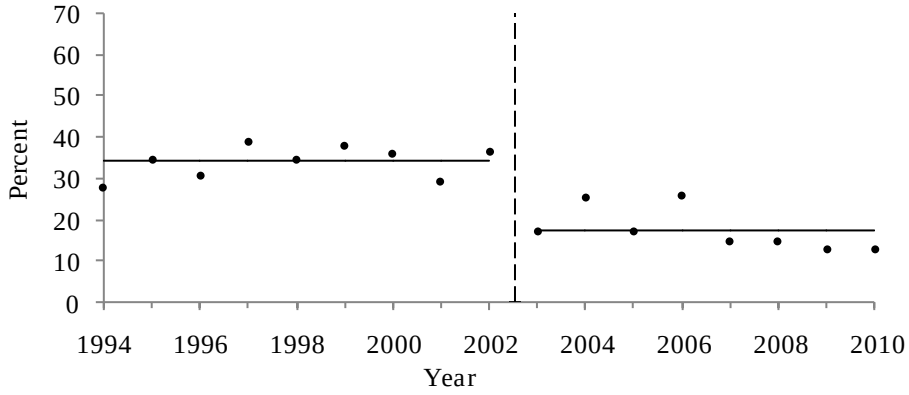


Figure 4: Ethnic Attrition Rates by Survey Year for Selected Groups

A. First-Generation Dominicans



B. Second-Generation Puerto Ricans with Only One Parent Born in Puerto Rico



C. Third-Generation Mexicans with Hispanic Ethnicity on Only One Side of Their Family

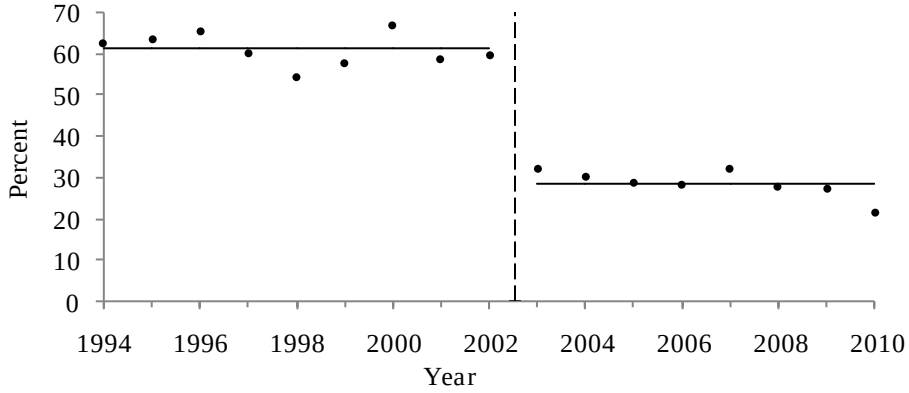


Figure 5: Ethnic Attrition Rates of Second-Generation Adults with Only One Parent Born in the Relevant Country, by Survey Year

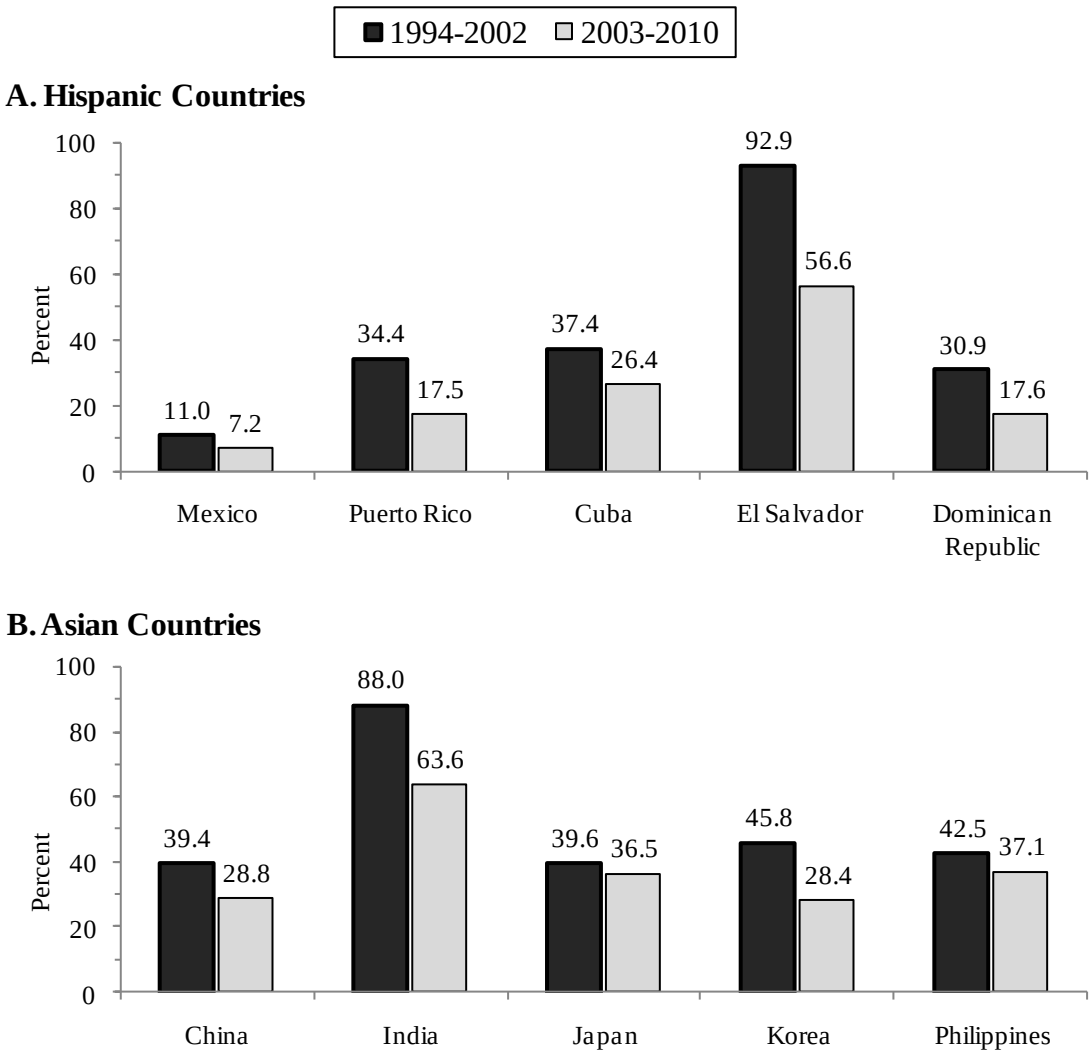


Figure 6: Ethnic Attrition Rates of Third-Generation Children with the Relevant Ethnicity on Only One Side of Their Family, by Survey Year

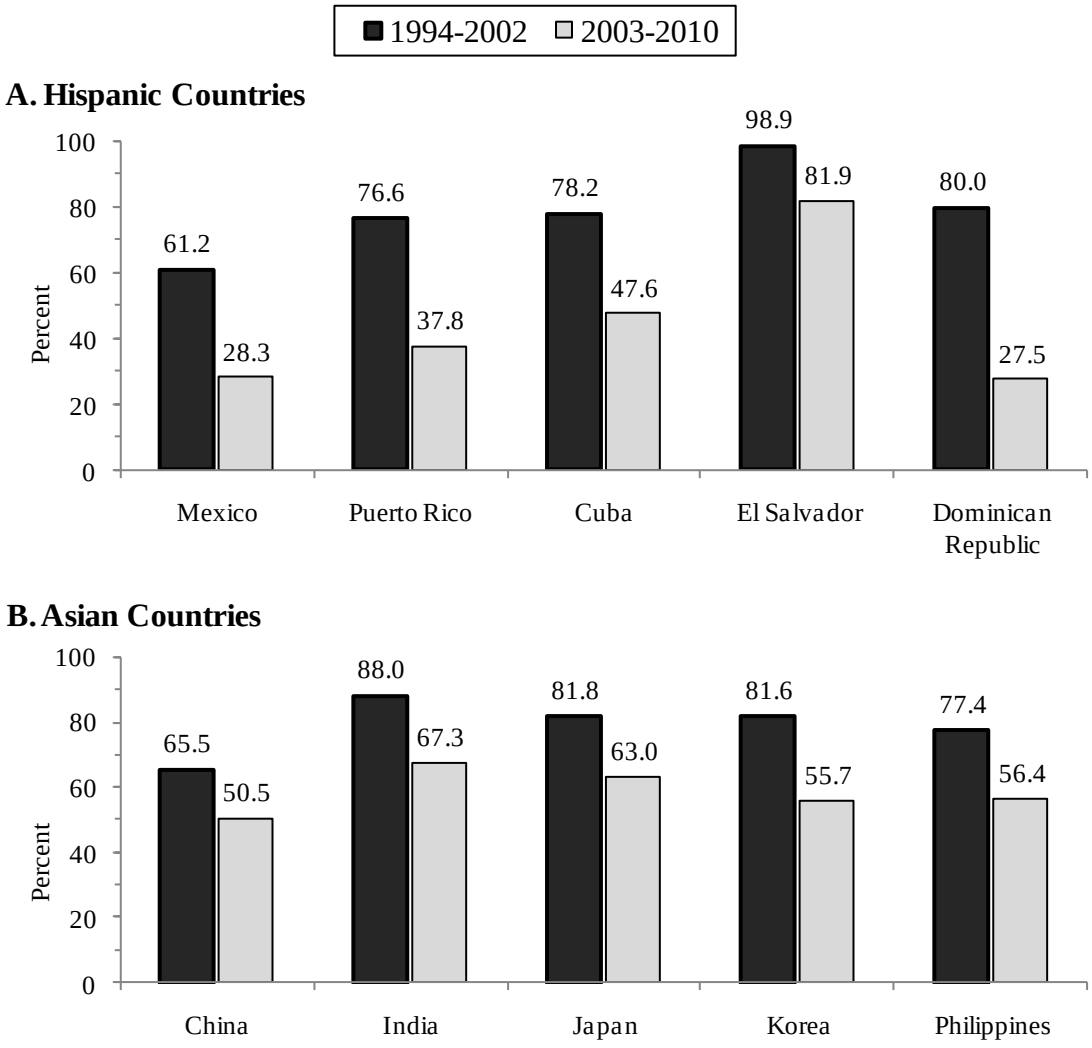


Table 1: Ethnic Identification of First- and Second-Generation Adults from Hispanic Countries

	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
First Generation					
Percent with:					
Age at immigration ≥ 16	77.9	54.7	62.9	82.9	80.1
Age at immigration < 16	22.1	45.3	37.1	17.1	18.9
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Hispanic:					
Age at immigration ≥ 16	99.0	97.7	98.7	97.4	89.7
	(0.05)	(0.2)	(0.2)	(0.2)	(0.5)
Age at immigration < 16	98.7	94.7	96.4	94.2	90.6
	(0.1)	(0.4)	(0.4)	(0.7)	(1.0)
All	98.9	96.4	97.8	96.9	89.9
	(0.04)	(0.2)	(0.2)	(0.2)	(0.4)
Sample size	56,295	8,084	4,773	6,621	4,737
Second Generation					
Percent with:					
Both parents born in country	53.1	67.4	51.7	13.1	54.0
Father only born in country	26.8	19.3	26.8	39.7	21.7
Mother only born in country	20.1	13.3	21.4	47.2	24.4
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Hispanic:					
Both parents born in country	97.9	95.6	94.8	76.4	88.3
	(0.2)	(0.3)	(0.8)	(3.0)	(1.7)
Father only born in country	91.7	74.9	68.6	11.9	76.8
	(0.4)	(1.2)	(2.2)	(1.3)	(3.4)
Mother only born in country	89.8	74.4	68.4	16.2	76.5
	(0.6)	(1.5)	(2.5)	(1.4)	(3.3)
All	94.6	88.7	82.1	22.4	82.9
	(0.2)	(0.4)	(0.9)	(1.1)	(1.4)
Sample size	14,015	6,379	1,651	1,520	697

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include individuals ages 25-59. The first generation consists of individuals born in the relevant source country (excluding those born abroad of an American parent). The second generation denotes U.S.-born individuals who have at least one parent born in the relevant source country.

Table 2: Ethnic Identification of First- and Second-Generation Adults from Asian Countries

	China	India	Japan	Korea	Philippines
First Generation					
Percent with:					
Age at immigration ≥ 16	90.3	91.4	91.4	81.9	82.1
Age at immigration < 16	9.7	8.6	8.6	18.1	17.9
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Asian:					
Age at immigration ≥ 16	98.5	92.0	97.6	98.5	95.8
	(0.2)	(0.3)	(0.3)	(0.2)	(0.2)
Age at immigration < 16	95.2	85.5	86.6	97.2	96.0
	(0.8)	(1.4)	(2.5)	(0.5)	(0.4)
All	98.2	91.5	96.6	98.3	95.9
	(0.2)	(0.3)	(0.4)	(0.2)	(0.2)
Sample size	6,874	7,709	2,178	5,209	10,626
Second Generation					
Percent with:					
Both parents born in country	53.6	62.5	15.0	39.0	49.7
Father only born in country	27.4	24.3	20.2	8.3	29.0
Mother only born in country	19.0	13.3	64.8	52.7	21.3
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Asian:					
Both parents born in country	95.4	85.5	97.7	97.4	95.2
	(0.7)	(1.8)	(1.0)	(1.0)	(0.6)
Father only born in country	72.6	31.3	73.3	58.0	68.7
	(2.2)	(3.8)	(2.6)	(7.1)	(1.7)
Mother only born in country	57.5	15.9	58.4	68.5	48.9
	(2.9)	(4.1)	(1.6)	(2.6)	(2.1)
All	81.9	63.1	67.3	78.9	77.6
	(1.0)	(1.9)	(1.2)	(1.7)	(0.8)
Sample size	1,572	618	1,484	602	2,648

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include individuals ages 25-59. The first generation consists of individuals born in the relevant source country (excluding those born abroad of an American parent). The second generation denotes U.S.-born individuals who have at least one parent born in the relevant source country.

Table 3: Education of Second-Generation Adults, by Ethnic Identification

A. Hispanic Countries	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
Average years of education:					
Identified as Hispanic	12.41	12.64	14.26	13.15	13.44
	(0.02)	(0.03)	(0.07)	(0.14)	(0.10)
Not identified as Hispanic	13.35	13.35	14.36	13.42	13.42
	(0.09)	(0.09)	(0.13)	(0.07)	(0.17)
All	12.46	12.72	14.28	13.36	13.43
	(0.02)	(0.03)	(0.06)	(0.06)	(0.09)

B. Asian Countries	China	India	Japan	Korea	Philippines
Average years of education:					
Identified as Asian	15.65	16.66	14.43	15.02	14.09
	(0.06)	(0.08)	(0.07)	(0.10)	(0.05)
Not identified as Asian	15.02	15.23	13.99	14.36	14.06
	(0.14)	(0.16)	(0.09)	(0.18)	(0.09)
All	15.53	16.13	14.29	14.88	14.08
	(0.05)	(0.08)	(0.06)	(0.09)	(0.04)

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include U.S.-born individuals ages 25-59 who have at least one parent born in the relevant source country.

Table 4: Ethnic Identification of Third-Generation Children, by Nativity of Grandparents

A. Hispanic Countries	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
Percent with:					
3 or 4 grandparents born in country	20.6	21.9	11.3	1.4	10.1
2 grandparents born in country	33.4	40.2	37.4	5.5	43.1
1 grandparent born in country	46.0	37.9	51.3	93.1	46.9
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Hispanic:					
3 or 4 grandparents born in country	97.5	93.8	91.5	33.3	90.5
	(0.4)	(1.0)	(2.9)	(12.6)	(6.6)
2 grandparents born in country	85.6	59.3	55.8	48.3	76.7
	(0.7)	(1.5)	(2.8)	(6.5)	(4.5)
1 grandparent born in country	70.4	45.7	39.8	8.4	59.2
	(0.8)	(1.6)	(2.4)	(0.9)	(5.0)
All	81.1	61.7	51.6	11.0	69.9
	(0.5)	(1.0)	(1.7)	(0.9)	(3.2)
Sample size	6,818	2,564	829	1,086	209

B. Asian Countries	China	India	Japan	Korea	Philippines
Percent with:					
3 or 4 grandparents born in country	11.2	5.9	1.2	2.2	8.2
2 grandparents born in country	36.5	42.4	6.8	14.1	33.1
1 grandparent born in country	52.4	51.8	92.0	83.6	58.7
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Asian:					
3 or 4 grandparents born in country	90.0	90.0	100.0	100.0	100.0
	(3.6)	(10.0)	(0.0)	(0.0)	(0.0)
2 grandparents born in country	72.9	48.6	76.0	86.8	71.9
	(2.9)	(5.9)	(6.1)	(5.6)	(2.2)
1 grandparent born in country	40.4	10.2	40.0	40.9	36.6
	(2.7)	(3.2)	(1.9)	(3.3)	(1.8)
All	57.8	31.2	43.2	48.7	53.5
	(2.0)	(3.6)	(1.8)	(3.1)	(1.4)
Sample size	628	170	739	269	1,226

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country.

Table 5: Ethnic Identification of Third-Generation Children, by Source of Ethnicity

A. Hispanic Countries	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
Percent who are:					
Hispanic on both sides of family	60.1	38.9	27.1	10.0	45.5
Hispanic on one side of family only	39.9	61.1	72.9	90.0	54.5
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Hispanic:					
Hispanic on both sides of family	98.2	92.0	91.6	74.3	91.6
	(0.2)	(0.9)	(1.9)	(4.2)	(2.9)
Hispanic on one side of family only	55.2	42.4	36.8	3.9	51.8
	(1.0)	(1.2)	(2.0)	(0.6)	(4.7)
All	81.1	61.7	51.6	11.0	69.9
	(0.5)	(1.0)	(1.7)	(0.9)	(3.2)

B. Asian Countries	China	India	Japan	Korea	Philippines
Percent who are:					
Asian on both sides of family	29.8	7.6	22.9	16.4	30.2
Asian on one side of family only	70.2	92.4	77.1	83.6	69.8
Total	100.0	100.0	100.0	100.0	100.0
Percent identified as Asian:					
Asian on both sides of family	95.7	92.3	98.2	100.0	97.3
	(1.5)	(7.7)	(1.0)	(0.0)	(0.8)
Asian on one side of family only	41.7	26.1	26.8	38.7	34.6
	(2.4)	(3.5)	(1.9)	(3.3)	(1.6)
All	57.8	31.2	43.2	48.7	53.5
	(2.0)	(3.6)	(1.8)	(3.1)	(1.4)

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country.

Table 6: Parental Education of Third-Generation Children, by Child's Ethnic Identification

A. Hispanic Countries	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
Average education of fathers:					
Child identified as Hispanic	12.53	12.98	14.37	12.76	13.58
	(0.03)	(0.05)	(0.11)	(0.19)	(0.17)
Child not identified as Hispanic	13.57	13.54	14.63	13.59	13.59
	(0.06)	(0.07)	(0.13)	(0.08)	(0.29)
All	12.73	13.20	14.50	13.50	13.58
	(0.03)	(0.04)	(0.08)	(0.07)	(0.14)
Average education of mothers:					
Child identified as Hispanic	12.59	13.07	14.25	13.02	13.89
	(0.03)	(0.05)	(0.11)	(0.16)	(0.17)
Child not identified as Hispanic	13.38	13.46	14.15	13.39	13.41
	(0.06)	(0.07)	(0.11)	(0.07)	(0.23)
All	12.74	13.22	14.20	13.35	13.75
	(0.03)	(0.04)	(0.08)	(0.06)	(0.14)

B. Asian Countries	China	India	Japan	Korea	Philippines
Average education of fathers:					
Child identified as Asian	15.95	17.04	14.78	15.18	14.01
	(0.10)	(0.24)	(0.13)	(0.20)	(0.08)
Child not identified as Asian	15.53	15.56	13.89	14.30	14.18
	(0.16)	(0.21)	(0.11)	(0.19)	(0.09)
All	15.77	16.02	14.28	14.72	14.09
	(0.09)	(0.17)	(0.08)	(0.14)	(0.06)
Average education of mothers:					
Child identified as Asian	15.79	17.17	14.87	14.90	14.26
	(0.10)	(0.22)	(0.13)	(0.21)	(0.07)
Child not identified as Asian	15.28	15.64	13.79	14.30	14.00
	(0.15)	(0.21)	(0.10)	(0.18)	(0.09)
All	15.57	16.12	14.26	14.59	14.14
	(0.09)	(0.17)	(0.08)	(0.14)	(0.06)

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. The samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country.

Table 7: Parental Education of Third-Generation Children, by Source of Ethnicity and Child's Ethnic Identification

A. Hispanic Countries	Mexico	Puerto Rico	Cuba	El Salvador	Dominican Republic
Average education of fathers:					
Hispanic on both sides of family	12.18	12.48	14.03	12.92	13.09
	(0.04)	(0.06)	(0.15)	(0.22)	(0.18)
Hispanic on one side of family only	13.55	13.65	14.67	13.56	13.99
	(0.04)	(0.05)	(0.10)	(0.07)	(0.21)
Child identified as Hispanic	13.48	13.65	14.68	13.55	14.19
	(0.06)	(0.08)	(0.16)	(0.28)	(0.28)
Child not identified as Hispanic	13.64	13.65	14.66	13.56	13.78
	(0.06)	(0.07)	(0.13)	(0.08)	(0.31)
Average education of mothers:					
Hispanic on both sides of family	12.29	12.65	13.83	13.06	13.36
	(0.03)	(0.06)	(0.15)	(0.18)	(0.21)
Hispanic on one side of family only	13.41	13.59	14.34	13.38	14.07
	(0.04)	(0.05)	(0.09)	(0.07)	(0.17)
Child identified as Hispanic	13.42	13.65	14.63	13.32	14.66
	(0.05)	(0.08)	(0.15)	(0.27)	(0.22)
Child not identified as Hispanic	13.40	13.54	14.17	13.38	13.44
	(0.06)	(0.07)	(0.11)	(0.07)	(0.25)

B. Asian Countries	China	India	Japan	Korea	Philippines
Average education of fathers:					
Asian on both sides of family	15.60	16.77	14.50	14.93	13.65
	(0.18)	(0.62)	(0.17)	(0.35)	(0.10)
Asian on one side of family only	15.85	15.96	14.21	14.68	14.28
	(0.11)	(0.18)	(0.10)	(0.15)	(0.07)
Child identified as Asian	16.02	17.15	15.04	15.30	14.46
	(0.15)	(0.25)	(0.19)	(0.24)	(0.12)
Child not identified as Asian	15.72	15.54	13.90	14.30	14.19
	(0.15)	(0.21)	(0.11)	(0.19)	(0.09)
Average education of mothers:					
Asian on both sides of family	15.13	16.46	14.70	15.00	14.02
	(0.17)	(0.61)	(0.17)	(0.36)	(0.10)
Asian on one side of family only	15.76	16.09	14.12	14.52	14.19
	(0.10)	(0.18)	(0.09)	(0.15)	(0.07)
Child identified as Asian	16.17	17.37	14.99	14.85	14.55
	(0.14)	(0.20)	(0.20)	(0.26)	(0.11)
Child not identified as Asian	15.47	15.64	13.80	14.30	14.00
	(0.13)	(0.21)	(0.10)	(0.18)	(0.09)

Source: 1994-2010 CPS data.
Note: Standard errors are shown in parentheses. The samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country.

Table 8: Aggregate Estimates of the Incidence and Selectivity of Ethnic Identification for Hispanics, by Generation and Survey Year

	1994-2010	1994-2002	2003-2010
First-Generation Adults			
Percent identified as Hispanic	97.91	97.01	98.62
	(0.05)	(0.09)	(0.06)
Average years of education:			
Identified as Hispanic	9.56	9.28	9.78
	(0.01)	(0.02)	(0.02)
Not identified as Hispanic	11.13	11.17	11.05
	(0.10)	(0.12)	(0.17)
All	9.60	9.34	9.80
	(0.01)	(0.02)	(0.02)
Second-Generation Adults			
Percent identified as Hispanic	87.28	81.54	92.55
	(0.22)	(0.36)	(0.24)
Average years of education:			
Identified as Hispanic	12.62	12.37	12.83
	(0.02)	(0.03)	(0.02)
Not identified as Hispanic	13.47	13.42	13.60
	(0.04)	(0.05)	(0.07)
All	12.73	12.56	12.89
	(0.02)	(0.03)	(0.02)
Third-Generation Children			
Percent identified as Hispanic	67.33	55.55	80.67
	(0.44)	(0.65)	(0.55)
Average education of fathers:			
Child identified as Hispanic	12.75	12.39	13.03
	(0.03)	(0.04)	(0.03)
Child not identified as Hispanic	13.67	13.59	13.90
	(0.04)	(0.04)	(0.08)
All	13.05	12.92	13.20
	(0.02)	(0.03)	(0.03)
Average education of mothers:			
Child identified as Hispanic	12.81	12.38	13.14
	(0.03)	(0.04)	(0.03)
Child not identified as Hispanic	13.48	13.33	13.89
	(0.03)	(0.04)	(0.07)
All	13.03	12.80	13.28
	(0.02)	(0.03)	(0.03)

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. For these calculations, Hispanic source countries are Mexico, Puerto Rico, Cuba, El Salvador, and the Dominican Republic. First-generation adults are individuals ages 25-59 who were born in an Hispanic source country (excluding those born abroad of an American parent). Second-generation adults are U.S.-born individuals ages 25-59 who have at least one parent born in an Hispanic source country. Third-generation children are U.S.-born individuals ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in an Hispanic source country. The sample sizes across all years (1994-2010) are as follows: 80,510 for first-generation adults, 23,881 for second-generation adults, and 11,139 for third-generation children.

Table 9: Aggregate Estimates of the Incidence and Selectivity of Ethnic Identification for Asians, by Generation and Survey Year

	1994-2010	1994-2002	2003-2010
First-Generation Adults			
Percent identified as Asian	95.74	95.28	96.15
	(0.11)	(0.17)	(0.15)
Average years of education:			
Identified as Asian	14.64	14.37	14.88
	(0.02)	(0.03)	(0.02)
Not identified as Asian	14.70	14.65	14.75
	(0.08)	(0.11)	(0.10)
All	14.64	14.38	14.87
	(0.02)	(0.03)	(0.02)
Second-Generation Adults			
Percent identified as Asian	75.15	71.83	77.70
	(0.52)	(0.82)	(0.67)
Average years of education:			
Identified as Asian	14.81	14.60	14.96
	(0.03)	(0.05)	(0.04)
Not identified as Asian	14.37	14.33	14.41
	(0.05)	(0.08)	(0.08)
All	14.70	14.52	14.84
	(0.03)	(0.04)	(0.04)
Third-Generation Children			
Percent identified as Asian	49.58	40.76	56.52
	(0.92)	(1.36)	(1.22)
Average education of fathers:			
Child identified as Asian	14.83	14.57	14.98
	(0.06)	(0.10)	(0.07)
Child not identified as Asian	14.44	14.38	14.50
	(0.06)	(0.09)	(0.09)
All	14.63	14.45	14.77
	(0.04)	(0.06)	(0.06)
Average education of mothers:			
Child identified as Asian	14.90	14.70	15.01
	(0.06)	(0.09)	(0.07)
Child not identified as Asian	14.31	14.13	14.50
	(0.06)	(0.08)	(0.08)
All	14.60	14.36	14.79
	(0.04)	(0.06)	(0.05)

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. For these calculations, Asian source countries are China, India, Japan, Korea, and the Philippines. First-generation adults are individuals ages 25-59 who were born in an Asian source country (excluding those born abroad of an American parent). Second-generation adults are U.S.-born individuals ages 25-59 who have at least one parent born in an Asian source country. Third-generation children are U.S.-born individuals ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in an Asian source country. The sample sizes across all years (1994-2010) are as follows: 32,596 for first-generation adults, 6,870 for second-generation adults, and 2,975 for third-generation children.

Appendix Table A.1: Ethnic Identification of First-Generation Adults, by Survey Year

A. Hispanic Countries	Mexico		Puerto Rico		Cuba		El Salvador		Dominican Republic	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Hispanic:										
Age at immigration ≥ 16	99.0	99.0	97.4	98.1	98.7	98.6	95.8	98.7	81.6	98.3
	(0.1)	(0.1)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.2)	(0.9)	(0.3)
Age at immigration < 16	98.6	98.7	94.0	95.5	96.2	96.8	88.2	97.9	82.6	96.9
	(0.2)	(0.1)	(0.5)	(0.5)	(0.6)	(0.6)	(1.6)	(0.5)	(1.9)	(0.8)
All	98.9	98.9	95.9	96.9	97.7	98.0	94.7	98.5	81.8	98.0
	(0.1)	(0.1)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.2)	(0.8)	(0.3)
Sample size	23,655	32,640	4,325	3,759	2,511	2,262	2,805	3,816	2,367	2,370

B. Asian Countries	China		India		Japan		Korea		Philippines	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Asian:										
Age at immigration ≥ 16	98.7	98.2	89.2	94.0	97.4	97.8	98.2	98.8	95.9	95.8
	(0.2)	(0.2)	(0.6)	(0.4)	(0.5)	(0.5)	(0.3)	(0.2)	(0.3)	(0.3)
Age at immigration < 16	94.0	96.1	82.5	87.6	88.9	84.5	97.2	97.3	95.9	96.1
	(1.4)	(1.0)	(2.3)	(1.7)	(3.3)	(3.7)	(0.9)	(0.7)	(0.7)	(0.6)
All	98.3	98.0	88.6	93.5	96.8	96.5	98.0	98.5	95.9	95.9
	(0.2)	(0.2)	(0.6)	(0.4)	(0.5)	(0.6)	(0.3)	(0.2)	(0.3)	(0.3)
Sample size	3,188	3,686	3,207	4,502	1,216	962	2,505	2,704	5,088	5,538

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. The samples include individuals ages 25-59 born in the relevant source country (excluding those born abroad of an American parent).

Appendix Table A.2: Ethnic Identification of Second-Generation Adults, by Survey Year

A. Hispanic Countries

	Mexico		Puerto Rico		Cuba		El Salvador		Dominican Republic	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Hispanic:										
Both parents born in country	97.8	97.9	94.8	96.3	95.8	94.0	48.8	95.0	78.6	95.4
	(0.3)	(0.2)	(0.5)	(0.4)	(1.0)	(1.1)	(5.6)	(2.0)	(3.3)	(1.4)
Father only born in country	89.7	93.6	65.6	82.5	61.4	75.8	6.4	28.3	74.0	79.5
	(0.7)	(0.6)	(2.0)	(1.5)	(3.3)	(2.9)	(1.2)	(3.7)	(5.2)	(4.6)
Mother only born in country	88.0	91.6	65.5	82.6	64.5	71.3	7.7	65.1	63.6	84.6
	(0.9)	(0.7)	(2.4)	(1.8)	(3.9)	(3.2)	(1.1)	(4.7)	(6.0)	(3.6)
All	93.2	95.7	85.8	91.6	79.8	84.2	10.1	59.7	74.2	89.5
	(0.3)	(0.2)	(0.6)	(0.5)	(1.4)	(1.2)	(0.9)	(2.5)	(2.5)	(1.5)
Sample size	6,241	7,774	3,126	3,253	773	878	1,143	377	298	399

B. Asian Countries

	China		India		Japan		Korea		Philippines	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Asian:										
Both parents born in country	97.0	93.8	80.2	87.6	97.7	97.9	100.0	96.3	93.8	96.1
	(0.8)	(1.1)	(3.8)	(2.0)	(1.3)	(1.5)	(0.0)	(1.5)	(1.1)	(0.7)
Father only born in country	66.8	77.6	14.5	43.2	81.4	63.2	46.7	62.9	66.7	70.9
	(3.3)	(2.8)	(4.5)	(5.3)	(3.0)	(4.2)	(13.3)	(8.3)	(2.3)	(2.4)
Mother only born in country	50.8	62.6	7.9	22.7	52.7	63.5	55.6	72.9	39.9	54.6
	(4.4)	(3.7)	(4.4)	(6.4)	(2.4)	(2.1)	(5.6)	(2.9)	(3.3)	(2.7)
All	80.7	83.1	47.9	71.0	66.8	67.8	73.8	80.9	73.7	80.6
	(1.5)	(1.3)	(3.4)	(2.3)	(1.7)	(1.7)	(3.4)	(1.9)	(1.3)	(1.0)
Sample size	734	838	211	407	747	737	168	434	1,142	1,506

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. The samples include U.S.-born individuals ages 25-59 who have at least one parent born in the relevant source country.

Appendix Table A.3: Ethnic Identification of Third-Generation Children, by Survey Year

A. Hispanic Countries

	Mexico		Puerto Rico		Cuba		El Salvador		Dominican Republic	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Hispanic:										
Hispanic on both sides of family	98.0	98.4	88.7	95.9	91.3	91.8	57.6	100.0	83.0	100.0
	(0.3)	(0.3)	(1.4)	(0.9)	(2.8)	(2.5)	(6.1)	(0.0)	(5.5)	(0.0)
Hispanic on one side of family only	38.8	71.7	23.4	62.2	21.8	52.4	1.1	18.1	20.0	72.5
	(1.3)	(1.2)	(1.5)	(1.8)	(2.4)	(2.9)	(0.4)	(3.1)	(6.0)	(5.4)
All	74.0	87.9	49.7	74.8	39.2	63.9	5.3	35.5	52.2	83.8
	(0.8)	(0.6)	(1.4)	(1.2)	(2.4)	(2.4)	(0.8)	(3.4)	(5.2)	(3.4)
Sample size	3,363	3,455	1,341	1,223	411	418	883	203	92	117

B. Asian Countries

	China		India		Japan		Korea		Philippines	
	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010	1994-2002	2003-2010
Percent identified as Asian:										
Asian on both sides of family	97.4	94.5	NA	92.3	99.0	97.1	100.0	100.0	98.5	96.6
	(1.8)	(2.2)		(7.7)	(1.0)	(2.1)	(0.0)	(0.0)	(1.1)	(1.2)
Asian on one side of family only	34.5	49.5	12.0	32.7	18.2	37.0	18.4	44.3	22.6	43.6
	(3.1)	(3.4)	(4.6)	(4.6)	(2.2)	(3.0)	(5.6)	(3.8)	(2.2)	(2.2)
All	50.3	64.9	12.0	39.2	38.1	49.4	29.8	53.8	42.8	60.9
	(2.9)	(2.7)	(4.6)	(4.5)	(2.4)	(2.8)	(6.1)	(3.4)	(2.2)	(1.8)
Sample size	306	322	50	120	409	330	57	212	502	724

Source: 1994-2010 CPS data.

Note: Standard errors are shown in parentheses. The samples include U.S.-born children ages 17 and below who live in intact families and have two U.S.-born parents but at least one grandparent born in the relevant source country. For Indians, the sample for the years 1994-2002 contains no observations with Asian ethnicity on both sides of the family.