Moving on Up? Access, Persistence, and Outcomes of Immigrant and Native Youth in Postsecondary Education

Scott G. De Burgomaster

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Reading Committee:

Charles Hirschman, Chair

Jerald R Herting

Stewart E Tolnay

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Abstract

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Scott G. De Burgomaster

Chair of the Supervisory Committee:

Professor Charles Hirschman
Sociology

Despite evidence that prior waves of immigrants have largely been absorbed into American society, concern over the fate of newly arriving immigrants from Latin America and Asia persist. Much of the debate focuses on the pattern of their adaptation and the factors that explain different paths to incorporation. Immigration scholars, however, frequently treat theories of adaptation as antithetical; pitting one against the other from which one emerges as the superior account. To complicate matters, firm conclusions regarding the trajectory of adaptation are difficult to draw given the recent arrival of late-twentieth-century immigrants where the majority of the second-generation are still children and attend primary and secondary school. Only recently have second-generation immigrants begun to enter postsecondary institutions in large numbers and evidence of their future socioeconomic prospects more apparent.

In order to close these gaps in the extant literature and develop a greater understanding of the mechanisms that underlie the assimilation process, I revisit a fundamental question to the study of immigration: How well are immigrants assimilating into the American mainstream and what factors account for their pattern of incorporation? Specifically, the purpose of this study is to both describe and explain the

postsecondary educational career paths of immigrant and native youth in the United States, through the lens of several theoretical perspectives of immigrant incorporation and within a status attainment perspective.

Generational trends among national origin groups over the 20th century indicate that second-generation immigrants consistently attain higher levels of education than their first and three-plus generation counterparts. The second-generation advantage, however, occurs within a segmented assimilation framework wherein European and Asian immigrants come to resemble the native white population across generations and immigrants from Mexico and other Latin American countries assimilate to educational levels near those of African Americans. Overall, none of theories examined fully account for generational differences. Empirical evidence is greatest for the optimism hypothesis as parental and student expectations are important factors. Results also show modest support for elements of the segmented assimilation theory, although evidence for selective acculturation is associated with immigrants' homeland rather than conditions of the local environment.

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DEDICATION

I dedicate this dissertation to my wonderful family. Particularly to my understanding and patient wife, Joanna, who has put up with these many years of research, and to our wonderful children Ethan, Izzie, and Joshua, who are the joys of our lives. I must also thank my loving parents, Gary and Jan, and my terrific in-laws, Dennis and Joy, who have helped so much with baby-sitting and have given me their fullest support.

Chapter I: Introduction

U.S. Immigrants and the Complexities of their Assimilation

Horace Mann, Secretary of Education in Massachusetts from 1837 to 1848 and considered by many to be the founder of the common school in the United States, once said, "Education, then, beyond all other devices of human origin, is the *great equalizer* of the conditions of man—the balance-wheel of the social machinery" [emphasis mine]. For Mann, education represented a social good that should be extended to all and through which poverty and crime would disappear. This belief in education as the major source of social mobility in American society remains an enduring ideal of the United States as the 'land of opportunity'.

Prospects of a better life have fueled many to immigrate to the United States. The first great influx of immigrants occurred between 1901 and 1910 when roughly 8.7 million immigrants entered the United States, 90 percent of which arrived from European countries (U.S. Immigration and Naturalization Service 2002). Unlike previous waves of European settlers, these 'new' immigrants, arriving from Southern, Central, and Eastern parts of Europe, were largely unskilled, minimally educated, impoverished, and culturally foreign, both linguistically (non-English speaking) and religiously (Catholic and Jewish). In search of work and arriving during an era of rapid industrial growth, new immigrants swarmed to urban centers in the North and Midwest where native whites were also settling due to declining opportunities in agricultural areas. The sheer number of immigrants, their geographic concentration, and their willingness to work for lower wages—albeit higher than their homeland, coupled with cultural and normative differences, created fear and resentment among contemporary whites who saw these newcomers as a threat to their social and economic lifestyle (Bonacich 1972; Lieberson 1980).

Despite this harsh reception, newcomers and their descendants slowly achieved social and economic integration into middle- and upper-class standards of living. For

instance, by the second and third generation, white immigrants achieved education, occupation, and income levels that equaled or exceeded native whites (Lieberson 1980). This European experience of upward socioeconomic mobility over successive generations has come to represent the conventional model of immigrant assimilation. Romanticized as a triumph over hardships, ethnic success is cast as a turbulent, yet eventual integration spurred on through hard work, determination, and sacrifice. In reality, intergenerational upward mobility and integration into American society at the turn of the twentieth century was neither direct nor inevitable. However, most immigrants were able to overcome discrimination and a lack of socioeconomic resources by the second and third generations.

Despite similar hardships faced by past and present immigrants, recent changes in the demographic composition of the immigrant population and a transitioning American economy have prompted scholars to question the usefulness of the conventional model (Rumbaut 1997). One argument, made by the segmented assimilation theory, is that the socioeconomic diversity of contemporary immigrants and an increasingly bifurcated labor market, with highly paid jobs requiring advanced education on the one hand and low-wage service jobs on the other, produces different paths of incorporation. In this new economy, skilled and professional immigrants are more likely to secure employment and steady wages that allow them to ensure their children's education and upward mobility. Unskilled immigrants, however, are thought to have fewer opportunities to fortify their children's future, often relegated to unstable low-wage jobs, poorer neighborhoods, and forced to enroll their children in lower quality schools. Under these conditions, immigrant children's assimilation might follow a trajectory of downward mobility.

Another difference is a demographic shift in the ethnic, cultural, and gender diversity of contemporary immigrants. That is, the traditional model of immigration adjustment, some argue, represents the experience of white male settlers from southern and eastern Europe who could eventually assimilate because their European origins made them racially similar to earlier waves of immigrants from northern and western

European countries. However, since the passage of the 1965 Immigration Act, which removed national-origin quotas in favor of annual limitations, immigration from non-European regions has steadily risen—notably from Asia, Latin America, and the Caribbean. The distinctiveness of these new immigrants, particularly their darker skin color, is thought to make the option of assimilation less available to the second and later generations. While prior research has demonstrated that race can serve as a barrier to social and economic incorporation as exemplified by the limited upward mobility of African Americans as a result of discrimination (Blau and Duncan 1967; Lieberson 1980), the trajectory of minority immigrant groups is extremely uneven. For instance, some groups, such as recent Asian immigrants, tend to achieve (on average) a level of upward mobility that often exceeds that of native whites whereas other non-European immigrants experience mobility comparable to American Americans, also referred to native blacks (Mare 1995). Other studies have found greater differences within ethnic groups whereby generational difference, particularly the exceptional achievement of the second-generation compared to their first-generation and third and higher generation counterparts (Kao and Tienda 1995).

Research studies have only begun to disentangle how and why some ethnic groups assimilate more rapidly than other groups as well as generational differences within ethnic groups. This dissertation projects adds to this growing body of scholarship.

Purpose of the Study

To shed light on the socioeconomic trajectory of the late-twentieth-century wave of immigrants to the United States—commonly referred to as post-1965 immigrants—this project evaluates several competing hypotheses regarding the educational attainment of immigrant and native youth. For children of immigrants, either foreign-born (the first generation) or native-born (the second generation), the assimilation process and realization of their parents' desire for a better life begins with the

educational system. Most of the existing research on the education of immigrant youth focuses on primary and secondary schooling, often dealing with educational aspirations (Goldenberg et al. 2001), dropping out (Driscoll 1999; Perreira, Harris and Lee 2006), and academic achievement (Duran and Weffer 1992; Glick and White 2003; Kao and Tienda 1995). Few studies have examined how immigrants engage the postsecondary educational system, which for many young adults is the last step before entering the labor market.

Scholarly attention to immigrant incorporation and higher education focuses predominately on postsecondary enrollment behavior (Hagy and Staniec 2002; Vernez and Abrahamse 1996). For instance, immigrant high school graduates are more likely than their native-born counterparts to enroll in postsecondary education, attend college, and remain continuously enrolled through four years of schooling (Vernez and Abrahamse 1996). We are much less sure about how immigrant adolescents navigate the transition from high school to college, whether two-year or four-year enrollment is more likely, and whether college graduates experience the upward socioeconomic mobility their immigrant parents envisioned.

These issues are particularly relevant as a college education is increasingly required for entrance into the mainstream labor market (Collins 1979). Historically, a high school diploma more than provided the requisite skills for employment in a largely agricultural and later manufacturing-based economy. Since the shift to a predominately service-based economy, bifurcated between skilled professional and managerial jobs and innumerable low-paying, unskilled jobs, coupled with unprecedented access to higher education, a person with a high school degree or less faces a competitive disadvantage in the workforce. Often competing for jobs with those who have some college training, those at the lowest educational levels are forced into the lowest paying jobs or out of the labor market completely.

The main purpose of this project is to test the merits of several different theories of immigrant incorporation for predicting postsecondary outcomes. While these perspectives attempt to unravel how and why some children of immigrants enjoy high

levels of educational attainment and others are decidedly disadvantaged, there is little consensus among them. Much of the debate over the fate of immigrants, especially recent immigrants from Asia and Latin America, focuses on the pattern of their adaptation and the factors that explain different paths to incorporation. To complicate matters, however, firm conclusions regarding the trajectory of adaptation are difficult to draw given the recent arrival of late-twentieth-century immigrants where the majority of the second-generation are still children or adolescents and most attend primary and secondary school. Second-generation immigrants have only recently begun to enter postsecondary institutions in large numbers and evidence of their future socioeconomic prospects more apparent.

A principal question guiding this dissertation project and one that is fundamental to the study of immigration is *how well are immigrants, particularly newcomers from Asia and Latin America, assimilating into the American mainstream and what factors account for their pattern of incorporation*? Specifically, this study sets out to both describe and explain the postsecondary educational career paths of immigrant and native youth in the United States, through the lens of several theoretical perspectives of immigrant incorporation and within a status attainment perspective. To evaluate the immigrants' socioeconomic progress, this study answers four distinct but related questions. First, how do the educational trajectories of immigrant and native populations change over time and across generations? Second, how do educational trajectories reflect patterns predicted by popular theories of immigrant assimilation? Third, what factors described in the assimilation literature account for generational differences in educational attainment? Finally, to what extent and in what ways, does the importance of these factors vary for immigrants of different ethnic descent? The aim of the study is not to identify a single best theory, but to evaluate how the key relationships that underscore each perspective work together to explain distinctiveness in the immigrant experience.

Broadly defined, immigrant assimilation refers to the similarity of newcomers to the local or native population(s) over time and across generations.[1] Discussed in detail in subsequent chapters, scholarly definitions of assimilation emphasize differences in both the type (e.g., linguistic, cultural, economic, etc.) as well as the pace of assimilation (single event versus series of incremental steps). This analysis examines immigrants' educational assimilation across generations as measured by rates of postsecondary educational attainment between 1st generation (foreign-born), 2nd generation (U.S-born to foreign-born parents), and third and higher generation immigrants (U.S.-born to U.S.-born parents). Viewing educational incorporation as a crucial step in the assimilation process, comparisons of the pace of educational attainment for different ethnic groups are particularly important for assessing the future success of immigrant groups. Moreover, the generational trajectory of immigrants' educational assimilation (or their pattern of incorporation) from the first-generation through third and higher generation is vital to discern the direction of assimilation and whether observed patterns are consistent with current theories. Once immigrant patterns of educational assimilation are determined empirically, it is then possible to explore which factors and mechanisms account for these generational differences.

Chapter Layout

The chapters of this dissertation strive to answer the four research questions posed above. Chapter 2 addresses the first two questions by using pooled Current Population Survey data from 1996-2009 to trace the differential rates of educational attainment over time, by national origin and generational status. To evaluate the pace and trajectory of assimilation, it is first necessary to establish (empirically) immigrant

[1] Immigrant generations are differentiated by parental and child's place of birth such that "first generation" refers to foreign-born residents, "second generation" to U.S.-born children of foreign-born parents, and "third and higher generation" to U.S.-born children of U.S.-born parents. Ruben Rumbaut also distinguishes first generation immigrants by their age of arrival, referring to people who immigrate before or during their early teens as the 1.5 generation.

patterns of educational assimilation, which are characterized in the literature as following one of several potential pathways: upward, curvilinear with the second-generation outperforming first and three-plus generations, or bifurcated/segmented by national origins.

After detailing how immigrant trajectories compare to patterns predicted by assimilation theories, Chapter 3 develops a model of immigrant incorporation using the status attainment perspective to reconcile these theories. Since assimilation theories are often set in opposition to one another in the literature, use of a common platform enables us to generate testable hypotheses for the factors affecting educational attainment, directly and as mediators of ethnic and generational differences. Once establishing common theoretical ground among popular theories of assimilation, Chapters 4 and 5 empirically test the key casual mechanisms argued by each theory within the framework set forth by the proposed reconciled model of immigrant assimilation. These empirical chapters tackle the final two research questions using NELS:88/2000 panel data to determine which factors and theorized relationships account for generational differences in educational attainment and whether factors vary for immigrants of different ethnic descent.

Finally, Chapter 6 concludes with a summary of the findings from this dissertation project as well as contributions to immigrant scholarship. Avenues for future research efforts and policy implications are also discussed.

Chapter II: Generational Trends in Educational Attainment among National Origin Groups over the Twentieth Century

With more than four decades since Lyndon B. Johnson signed the Immigration and Nationality Act of 1965 (also known as the Hart-Celler Act), marking the resumption of large-scale immigration to the United States, concern over how immigrants and their children are being incorporated into the mainstream has reached a fevered pitch. Much of the attention centers on one underlying question: Are today's immigrants assimilating into the socioeconomic fabric of American life as easily as generations past? That is, are the Nation's newest streams of immigrants arriving from Asia, Latin America, and the Caribbean, who are more demographically diverse than previous waves of immigration from Europe, and their children achieving the same upward social and economic integration as early waves of immigrants?

Due to data limitations, however, attempts to monitor socioeconomic mobility by immigrant generation (first generation, the children of immigrants (second-generation), and native-born of native parentage (three-plus generation)) are very limited. As a select population, nationally representative survey studies, such as the *High School and Beyond* (HS&B), *National Educational Longitudinal Study* (NELS), and *National Longitudinal Study of Adolescent Health* (Add Health), rarely sample immigrants in numbers large enough to examine country-of-origin populations—even when ethnic minorities are over sampled. For many years, the decennial Census was one of the few data sets sufficiently large to examine small subpopulations of immigrants over successive generations as birthplace was collected for both respondents and their parents. After the 1970 Census, the ability to identify generational status was no longer possible as the parental birthplace question was removed, making it nearly impossible to directly identify children of immigrants (Hirschman 1994). The U.S. Census Bureau's Current Population Survey (CPS) is the one the few current surveys to ask questions about parents' place of birth, collecting data annually since 1994. Unfortunately, a single year of the CPS, similar to national surveys, contains too few

observations to conduct comparative analyses within and across generations based on country of origin or even national origin groups within broader regional categories. Yet the synchronization of measures across years of CPS data made possible by the Integrated Public Use Microdata Series Project (IPUMS) has enabled researchers to pool samples across surveys in order to build up a larger base of respondents.

This chapter takes advantage of the unique comparability of the IPUMS-CPS to detail the educational attainment of immigrant and native-born adults by national origins and birth cohort. Using a pooled data set from the 1996-2009 March supplement of the Current Populations Survey, I compare educational attainment by immigrant generation for several racial-ethnic origin groups: non-Hispanic white (first and second generation whites are identified as either Northern/Western European descent or of Southern/Central/Eastern European origins); non-Hispanic black; Asian and Pacific Islander; Mexican; and Other (Non-Mexican) Hispanic. My aim is to describe how patterns of educational incorporation vary over the course of the twentieth century for different national origin groups and to document how these trends correspond or depart from different hypothesized patterns of immigrant assimilation.

Patterns of Immigrant Educational Incorporation

Research on the adaptive trajectories of ethnic minorities to American society, both past and present, has predominately focused on their educational progress. Education has traditionally been viewed a major source of upward mobility for the economic assimilation of immigrant and disadvantaged minority groups, despite the fact groups vary widely in their ability to access school and convert scholastic achievements during the lifespan into occupational achievement and monetary returns (Blau and Duncan 1967; Featherman and Hauser 1978). For the children of immigrants, foreign-born (first generation) and native-born (second generation), the assimilation process and realization of their parents' desire for a better life begins with the educational system.

What remains unclear, however, is the differential pattern of educational achievement within and across generations and how contemporary immigrants compare with their European counterparts.

In the study of immigrant adaptation, both of past and contemporary waves, three patterns of incorporation have been proposed to describe the different educational trajectories of immigrants. The first commonly cited pattern is the classic upward pathway or the straight-line hypothesis. The straight-line pattern, championed by a number of scholars in various forms (Glazer and Moynihan 1963; Gordon 1964; Park 1928; Park 1950; Park and Burgess 1969), predicts immigrants will come to resemble the native-born population within and across generations, whereby the passage of time and the succession of generations leads to further integration within American society. Support for the traditional pattern is mainly derived from the millions of European immigrants who entered the United States at turn of the twentieth century and whose descendants are now nearly indistinguishable from the native population both socially (Alba and Golden 1986; Lieberson 1985; Lieberson and Waters 1988) and economically (Featherman and Hauser 1978; Hirschman 1983; Jacobs and Greene 1994; Lieberson 1980; Neidert and Farley 1985). Furthermore, some evidence shows immigrants from "old" ethnic stocks, particularly from England, Wales, and Scotland, enjoyed a higher level of socioeconomic success than new arrivals from less established lines of immigration (Blau and Duncan 1967). Even native blacks, whose restricted participation in civic life is well documented, have steadily narrowed educational disparities between themselves and native whites (Jencks and Phillips 1998). Thus, the classic pattern emphasizes marked reductions in ethnic differences over time rather than becoming indistinguishable from the native population.

A second pattern of immigrant incorporation is the second-generation advantage hypothesis. The second-generation advantage, noted by Blau and Duncan (1967) and more recently Kao and Tienda (1995), predicts a non-linear pattern of absorption wherein second-generation immigrants experience a dramatic increase in educational success relative to their first-generation and third- and higher-generation counterparts.

Unlike the classic upward pattern which predicts convergence for all ethnic groups, the second-generation edge is thought to occur for specific ethnic groups. That is, the pattern is assumed – for some theorists – to arise from the cultural orientations of immigrants' ancestral heritage that emphasize ambition, hard work, and upward mobility (i.e., valuation of education) (Rosen 1956; Rosen 1959). Others argue that the exceptional qualities of immigrant parents are engendered in the immigrant experience itself which requires the same drive and perseverance to achieve (Kasinitz et al. 2008). In general, the theory posits that immigrant children adopt their parents' dispositions, which in turn leads them to behave in ways that promote educational attainment. Second-generation immigrants, unlike first-generation youth, are able to take advantage of their inherited ambitions because of their greater English proficiency and less cultural distinctiveness. By the third generation, youths' optimism and aspirations for upward mobility diminish due to their parents' weakened, less idealistic ambitions. Support for the second-generation advantage pattern has been observed among early Russian (mostly of Jewish heritage) and Northwestern European immigrants (Blau and Duncan 1967; Duncan and Duncan 1968) as well as contemporary Asian immigrants (Kao and Tienda 1995; Rong and Grant 1992; Yang 2004) and to a lesser degree, immigrants of Latin American origins (Farley and Alba 2002; Landale, Oropesa and Llanes 1998). The extent to which the second-generation edge is consistent over time, particularly among Asian immigrants, remains an empirical question.

In contrast to the two other patterns, segmented-assimilation predicts a bifurcated pattern of incorporation in which some groups take a path of upward mobility across generations while others experience downward integration over successive generations (Portes and Zhou 1993; Zhou 1997). The theory holds that paths of incorporation follow different trajectories as a result of variations in the resources groups can draw on at the time of arrival (or for the children of immigrants, their parents' socioeconomic resources), family structure, and the context of reception—contingent on geographic location of settlement, "race" or color, national origin, and opportunity structure for mobility (Portes and Rumbaut 2001; Portes and Rumbaut

2006). From the segmented assimilation perspective, integration into the mainstream is far from a uniform process as outcomes vary within and between immigrant streams—varying over time as economic conditions and receptivity of the native population change. In general, immigrant groups with high levels of human capital (higher socioeconomic status) and greeted favorably by society are likely to follow the classic pathway of upward integration. Alternatively, groups who possess few resources and encounter an unfavorably reception are susceptible to long-term poverty for themselves and their children. Under conditions where assimilation may reduce chances for upward mobility, parents may seek to promote their children's upward mobility but limit their acculturation to American society by actively preserving traditional cultural values—a process referred to as selective acculturation.

Empirical evidence from early settlers supports the contention that groups arrive with different capacities to succeed (some immigrant groups outperforming natives while other lagged behind) and that the rate of mobility between generations within these groups varied dramatically as well (see Blau and Duncan 1967). Non-white immigrants of Latin American heritage (mostly of Mexican origin) represent a notable case as their early pattern of assimilation most closely resembled the successive handicaps observed among southern-born black Americans, albeit of a lesser magnitude (Duncan and Duncan 1968; Featherman and Hauser 1978). While a large fraction of the socioeconomic disadvantage for blacks and those of Latin American origins was attributed to social background (i.e., lesser human and economic capital), net disparities suggest these ethnic groups were unfavorably received by the main institutions of American society. Borjas (1991) claims the relatively low position of Mexican immigrants is due to a self-selection process whereby the greater relative opportunities in the U.S. for those who have low skill and education encourages low-skill immigrant streams, whereas Mexicans with high skills and education are likely to remain in a better position by remaining in the country. Mexican immigration to the U.S. is also encouraged by the well-established networks, the common border, and the relatively close distance and low financial cost (Feliciano 2005). We would expect then, that other

immigrants groups, who must travel much greater distances, to achieve higher levels of education upon arrival and experience a faster rate of upward mobility.

Each of these proposed patterns of generational mobility have been observed with some regularity with respect to both early twentieth century immigrants from Europe and contemporary immigrants from Asia and Latin America. However, such generational trends represent brief snapshots of the population and thus may not represent the 'true' generational pattern of adaptation. This investigation provides a more complete picture of the generational trends among racial-ethnic groups by pooling several years of the Current Population Survey (CPS) in order to build a large enough base of respondents for analysis. The next sections describe the scarcity of data available to examine generational status and how the CPS is a useful tool for studying the generational mobility of immigrants of small, often difficult to reach, country-of-origin populations.

Data on Nativity and Parentage: The Elusive Second Generation

The ability of social scientists to assess the socioeconomic well-being of the foreign-born population and their descendants has varied considerably over time. The availability of data on the nativity and parentage of the U.S. population has largely followed Federal efforts to track fluctuations in the composition of the foreign-stock population (Farley 1991; Farley and Alba 2002; Gibson and Lennon 1999). For instance, the Congressional decision to add a place-of-birth question to the decennial Census beginning in 1850 was likely motivated, at least in part, by the dramatic influx of largely European immigrants to the United States where foreign-born arrivals increased from 600,000 in the 1831-1840 period to over 1.7 million in the 1841-1850 period (U.S. Department of Homeland Security 2006). Two decades later, a question on parents' country of birth found its way onto the 1870 Census in response to concerns over the large and emerging population of second-generation immigrants. Over the next one hundred years, the Federal Government continued to monitor the population of

immigrants and the children of immigrants in the United States with the decennial census.

For the 1980 census, however, Congress removed the question on parents' place of birth. According to Farley (1991), two events led to the eventual demise of the parents' birthplace item. First, the share of the population with foreign parentage declined by 45 percent from 1920 to 1970, falling from 22 to 12 percent of the population over five decades (Gibson and Lennon 1999, Table 12). Farley surmises that had the parental birthplace question been asked in 1980, it would have yielded information on less than 10 percent of the population. Second, a surging interest to accurately enumerate the Hispanic-origin population coupled with a desire to collect information on the ethnic background for the rest of the population created the necessary push for the addition of a question on ancestry. The inclusion of an ancestry question was thought to subsume parental origins and thus preclude the need of parental birthplace measures.

Remarkably, the respondent's place of birth question remained despite an equally sharp decline in foreign-born population over the same period, decreasing from nearly 15 percent in the late ninetieth and early twentieth centuries to less than 5 percent by 1970. The continued use of the nativity question captured the latest surge of immigrants arriving primarily from Latin America and Asia beginning in the 1960s. Although the resurgences in the foreign-born population once again produced a large second-generation, the parental birthplace question was not returned to either the 1990, 2000, or 2010 Census, and its revival in the 2020 Census is unlikely.

The elimination of parental birthplace from the Census represents a significant setback to the study of immigrant integration, effectively ending a national forecast beyond immigrants' initial arrival. In addition to losing this crucial measure of the Nation's immigrant population, the Census was one of the few datasets large enough for researchers to identify small country-of-origin populations—imperative for studying the newest streams of immigration which are more geographically varied than prior waves. To fill the void, immigration scholars turned to localized studies of immigrants, often

through case studies (Gibson 1988; Waters 1994; Waters 1999; Zhou and Bankston 1994; Zhou and Bankston 1998) and survey questionnaires (e.g., Portes & Rumbaut's *Children of Immigrants Longitudinal Study*), and nationally representative longitudinal survey data sets such as the *High School and Beyond* and the *National Educational Longitudinal Study* (Glick and White 2003; Glick and White 2004; Kao and Tienda 1995; Vernez and Abrahamse 1996) produced by the National Center for Education Statistics and the *National Longitudinal Study of Adolescent Health* (Keller and Tillman 2008; Perreira, Harris and Lee 2006). While these data sources include questions on parental nativity necessary to delineate the second-generation as well as provide a rich assortment of contextual information not available in the Census, the numbers of respondents sampled are too few to conduct comparative analyses of immigrant generations based on country of origin or national origin groups within broader regional categories.

The study of generational mobility among newly arriving immigrants remained muted until questions about the birthplaces of both parents were added to the Current Population Survey (CPS) in March 1994. Originally developed by the U.S. Census Bureau and the Department of Labor after the Depression in the 1940s to measure monthly unemployment in the United States, the CPS has evolved to include a number of supplemental surveys to gauge the socioeconomic well-being of the Nation. Among these supplemental surveys, the March Annual Social and Economic Supplement (formerly known as the Annual Income File and Demographic Supplement) is the most widely used by social scientists, asking numerous and detailed questions about basic demographics, income, educational attainment, work experience, household composition, marital status, health insurance coverage, and geographic mobility. From the 1994 March supplement and onward, the monthly sample sizes include more than 60,000 households and covers a minimum of 128,000 respondents. Thus, for immigration scholars, the addition of a country of birth question of the respondent and the respondent's parents to the March supplement provided the first nationally representative sample since 1970 large enough to study the second generation while

simultaneously comparing them to first generation immigrants and to third and higher generations. Moreover, the March CPS collects detailed information on country of birth with over 150 foreign countries coded, enabling comparisons by specific geographic areas.

To study generational differences across even broad national origin groups, however, one year of the CPS is often too small for analytic use. The foremost issue is acquiring a large enough sample of second-generation immigrant respondents. That is, second generation immigrants are a difficult-to-reach population as the ebb and flow of their demographic presence lags behind the mass arrival of foreign-born immigrants by several decades with another decade or more before their socioeconomic progress is measurable. For instance, the newly emerging second-generation whose parents began arriving in the 1960s from Asia and Latin America is only now reaching an age where their social and economic integration is calculable (e.g., school and labor market participation, and family formation). While the CPS indirectly targets immigrant populations by over-sampling Asian and Hispanic minorities, the raw counts achieved remain modest, particular for investigating generational differences within origin groups. For examinations that also consider changes in the differential pattern of ethnic integration over time, the analytic capacity of one year of the CPS is quickly stretched beyond its limits.

Users of the CPS data who study generational differences have overcome these sample size limitations by pooling multiple years of the survey. Because each round of the March CPS is a representative sample of the U.S. population, it is possible to combine samples across surveys to build up a larger base of respondents. Moreover, efforts by the Integrated Public Use Microdata Series project (IPUMS) at the Minnesota Population Center to synchronize the coding scheme of virtually all substantive variables in the March CPS since 1962 have considerably eased the process of aligning rounds of the data. Thus, for the study of immigrant assimilation, the IPUMS-CPS for the years after 1993 is a powerful source of data for investigating social and economic changes within and across immigrant generations in the United States.

Current Population Survey as a Tool for Studying Immigrant Integration

Although the IPUMS project has made coalescing rounds of the CPS a relatively simple process, making it an attractive source of data for studying generational assimilation among past and contemporary immigrants, pooling files necessitates a clear understanding of the sample design. The CPS is a monthly survey of U.S. households, but samples are not selected anew twelve times a year. Rather, a housing unit follows a specific rotation in and out of the sample until interviewed eight times: residents participate for four consecutive months, removed for the next eight months, and interviewed again over the following four months. Each of the eight groups interviewed in a month are a representative subsample of the total monthly sample. Under this rotation scheme, there is a 50 percent household overlap between two adjacent years. This means that for the March CPS, one-half of the households sampled in one year were included in the sample the previous year. Since respondents who are sampled in adjoining years are asked the same questions and, at the same time, are not referred back to their previous answers, each set of results are unique because their situations could have changed from one year to the next. Therefore, each annual release, according the Census Bureau, is an independent and representative sample of the civilian, non-institutionalized population of the United States.

Pooling independent samples drawn from the same population at different times is a common practice in empirical research (Wooldridge 2003). From a statistical standpoint, the key feature of pooled cross sectional data is that it consists of independently sampled observations—unlike longitudinal data that follow the same observations over time. Yet, the CPS series is a curious blend of independent and seemingly dependent observations and, consequently, approaches to pooling these data embody this discord. For example, a number of studies use a pooled sample of non-consecutive years, typically every other year, in order to avoid having the same individuals appear in the sample multiple times (Baluja, Park and Myers 2003; Elmelech and Lu 2003; Farley and Alba 2002). In contrast, some studies (Mammen

2008; Slack and Jensen 2007; Waldinger 2001; Winfree 2009) employ a pooled series of consecutive years, but each year's sample is restricted to only those respondents in either the first four rotation groups (months-in-sample 1 through 4) or the last four groups (months-in-sample 5 through 8) to eliminate overlapping cases. Finally, a majority of investigations opt to simply pool several adjacent years, tolerating respondents to appear in the pooled sample more than once (Borjas 2006; Card, DiNardo and Estes 2000; Giuliano 2007; Glick and Van Hook 2008; Lofstrom and Bean 2002; Reimers 2006). Under this last specification, observations are assumed independent across samples.

An in-depth comparison of these approaches to pooling CPS data would be of great value, but is beyond the scope of this paper. Instead, the aim of this discussion is to highlight how maximizing the pooling capacity of the CPS offers a powerful tool for the study of generational mobility among immigrant groups. As I already noted, assembling enough observations across generations (particularly the second generation) by detailed national origin groups remains a formidable challenge. While the obvious advantage of a pooled sample across all years is the substantial increase to the sample size versus using every other year, which reduces the size by half, pooling a larger number of samples also generates more precise estimators and test statistics with more power. That is, pooled cross sectional data take on the qualities of a sampling distribution whereby statistics vary by cross sections (or samples) and the pooled sample is the average of these differences. Thus, for a pooled sample between 1994 and 2009, the estimated population parameters should approximate those of the population in 2001 and 2002 (the average years between 1994 and 2009). The precision of estimates (i.e., standard error) also improves as the variability around each year's estimate is averaged across the data series. For pooling consecutive years, an adjustment to the standard error for the correlation between adjacent years is available.[2]

[2] According to the technical documentation for the March CPS, years 1994 through 2009, the standard error (SE) for statistic, $\overline{X}$, derived from n years of pooled data is computed from the formula:

The fact that each cross section of the population may have different distributions in different time periods raises minor complications for empirical analysis. Specifically, since samples are drawn at different time points, observations are unlikely identically distributed—a basic assumption of inferential statistics. For example, the distribution of education in the United States has changed dramatically over time with steady growth toward greater levels of education attainment (Hout, Raftery and Bell 1993; Mare 1981b; White and Glick 2009). In a regression analysis, adding a set of dummy variables for all but one year is sufficient to capture the year-to-year variation across samples. For tabulations of pooled cross sectional data, distributional differences over time can be addressed by identifying respondents according to their year of birth. The alignment of respondents according to birth year also enables us to explore characteristics of the pooled sample and estimate time trend values of the U.S. population.

Figure 2.1 summarizes the contribution of each of the sixteen cross sections to the total *unweighted* sample size of the pooled 1994-2009 CPS data by birth cohort (detailed counts by survey year and birth cohort are available in Table A1 of Appendix A). The total sample size of the pooled dataset is 2.8 million persons, with each survey year making up between 5 and 8 percent of the total raw count. From the pooled frequency distribution of persons across birth cohorts, the bulk of observations are concentrated among more recent birth cohorts. Consistent with growth in the U.S. population after World War II and thus a greater probability of being sampled, there is a dramatic rise in the raw number of observations for birth cohorts between 1945 and 1964. Respondents born during this period, often referred to as the baby boom generation, account for almost 28 percent of the pooled sample. The decline in the

---

$SE_{\bar{X}} = \frac{SE_X}{n}$, where $SE_X = \sqrt{\sum_{i=1}^{n} SE_i^2 + 2r\sum_{i=1}^{n1} SE_{X_i} SE_{X_{i+1}}}$

The correlation between adjacent years, r, is 0.35 for non-Hispanic households and 0.55 for Hispanic households. The correlation between nonconsecutive years is zero. Although the correlations were developed from income estimates, their use for other types of estimates where the year-to-year correlation between identical households is high is considered acceptable. The most recent documentation is available at http://www.census.gov/apsd/techdoc/cps/cpsmar09.pdf (accessed December 6, 2009); see Appendix G: Source and Accuracy Statement.

number of respondents born after the 1960s and abrupt rise starting in the early 1980s follows known fluctuations in births as baby boomers began to have children. The period 'before 1929' captures all persons with an inexact year of birth due to differences in the top-coded values for age across survey years.

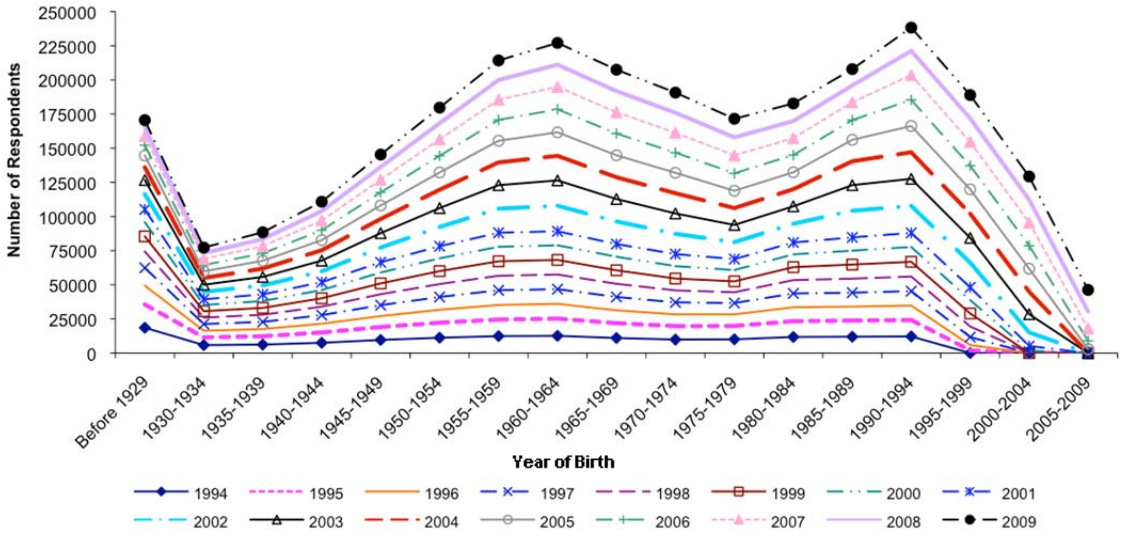


Figure 2.1. Frequency Distribution of Respondents from Pooled IPUMS-CPS Data by Birth Cohort and Survey Year

A breakdown of respondents by generational status is available in Figure 2.2. First-generation immigrants include all respondents born outside the United States or any outlying area of the United States (e.g., Puerto Rico). Unfortunately, the IPUMS-CPS data on year of immigration is too broad to identify what Ruben Rumbaut calls the 1.5 generation, persons who were born abroad but who spent most or all of their adolescence in the U.S. The inability to address year of immigration is discussed later because of its implications for examining generational differences in educational attainment. Respondents are defined as second-generation immigrants if they were born in the U.S. or outlying areas and at least one parent was born abroad. U.S.-born respondents of U.S.-born parents are classified as third and higher generation. The third- and higher-generation also includes respondents born abroad to parents with

American citizenship, a category that consists mostly of children of military personnel, as well as respondents with American Indian or Alaskan Native.

For a small fraction of respondents, generational status was indeterminate due to missing values for country of birth (n= 17,272 or 0.62% of the pooled sample). Among these missing values, more than half are from the unknown foreign born status of respondents (9,457) while the remaining cases are of U.S.-born respondents whose parents' country of birth is missing (n= 7,815). A majority of these missing values (n= 4,570) are localized to the 1994 year where country of birth was asked for only a limited number of countries (less than 40). By the March 1995 CPS, the list was expanded to include three times as many countries, although national origin limitations persist for half of the cross sectional sample due to the 50 percent year-to-year overlap, a fact that bears out under the current coding scheme (2,291 respondents are missing generational status for the 1995 year). Passel (1996, 1999) gives a detailed account of this problem as well as quality concerns regarding the accuracy of the race variable and sample weights for the 1994 and 1995 waves. For these reasons, a number of studies have chosen not to incorporate data from the 1994 March CPS, especially investigations of generational status, and analyses using the 1995 data often include Passel's race recode and recalibrated weights (see, for example, Borjas 2004; Lofstrom & Bean 2002).

For the moment, the current inquiry applies Passel's (1996) 'short-hand' race recode and revised weights for the 1994 and 1995 surveys.[3] Next, persons with an unknown nativity (missing value for country of birth) are simply categorized as missing

[3] Respondents in the 1994 and 1995 March CPS were given a choice between five racial categories: White, African American, Native American, Asian/Pacific Islander, and Other. Most, although not all, of the "Other" race respondents were of Hispanic origin. The Bureau's adjustment of the CPS weights so that population totals align with 1990 Census population controls, however, forced Asians, Native Americans and large portion of "Others" to equal to the census-based numbers for Native Americans and Asians. As a result, weighted CPS estimates for 1994 and 1995 substantially underestimate the total number of Native Americans and Asians. Passel's (1996) 'quick and dirty fix' is a two step process. First, for each respondent, the Census Bureau generated weight is multiplied by a specific adjustment factor for each racial category by non-Hispanic and Hispanic origins. Second, racial categories are reclassified by treating all persons of "Other" race as white. These changes produce weighted estimates that more closely coincide with Census-base population controls for race groups and for the Hispanic population.

or indeterminate. For U.S.-born respondents whose parents' nativity is missing (n= 7,815), generational status of either the second-generation or third- and higher-generation is imputed based on codes for race/ethnicity.[4] Since a large proportion of the Asian and Hispanic populations in the United States are recent immigrants, respondents identifying as racially/ethnically Asian or Hispanic are grouped as part of the second-generation (n=2,226). The rest of the respondents who have a partially indeterminate generational status, most of whom identified as non-Hispanic white (n=4,804), are defined as being of the third- and higher-generation.

For reasons of space and clarity, Figure 2.2 omits the contributions of each survey year to the distribution of respondents by generational status. Readers interested in the frequency of respondents by each cross section should see Tables A.1-A.5 in Appendix A. Respondents of the third plus generation, who represent more than 78 percent of the pooled sample, follow the same distributional pattern observed in Figure 2.1. The distribution for first-generation immigrants shows a peak in the raw number of respondents at the 1965-1969 birth cohort with a bulk of the observations evenly distributed before and after this period. The large share of first-generation respondents born during these years reflects the wave of immigration following amendments to U.S. immigration policy in 1965.

Although less noticeable among the larger counts of first-generation or third- and higher-generation respondents, the second-generation counts peak at two different time periods. First, despite the truncation for the oldest birth cohort, there is a slight swell in the number of respondents early in the twentieth century; likely traces of older stocks of immigrants arriving from Europe in late 1800s. The second, more pronounced bulge occurs in the latter half of the century with steady counts of roughly 10,000 respondents per birth cohort between the 1950s and 1960s and then a precipitous rise to a peak of 38,000 respondents for the 1990-1994 birth cohort (persons currently 15 to 19 years of age). This second wave of second-generation immigrations is presumably the

[4] Seventeen respondents had an undetermined racial-ethnic category (missing Hispanic origins) and coded as missing generational status (total missing = 9,474).

children of contemporary post-1965 immigrants arriving predominately from Asia and Latin America.

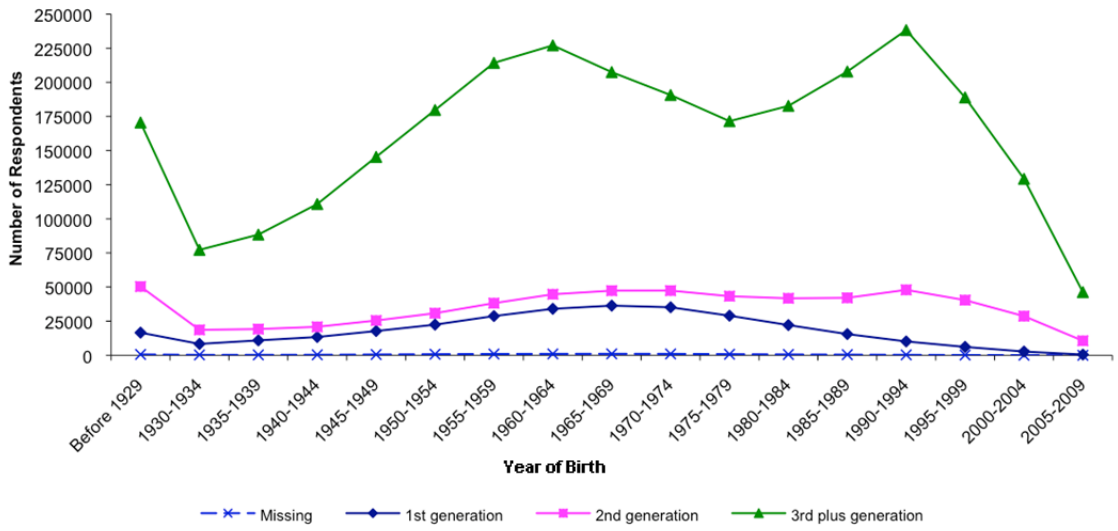


Figure 2.2. Frequency Distribution of Respondents by Generational Status

Finally, a major aim of pooling the CPS series is to generate the largest possible base of respondents in order to examine differential patterns of immigrant integration by national origin groups. Both the timing and geographical selectivity of mass immigration to the United Sates as well as the lag between immigrants' arrival and the emergence of the second-generation limit the availability of country of origin groups in most data collection efforts. However, attempts to generate a bigger 'N' through pooling data must also balance the introduction of error, and to that end, quantify the precision of estimates. In the case of the March CPS, the year-to-year sample design is generally quantifiable and the accuracy of estimates assessed, even for pooled samples (e.g., standard errors of averages for consecutive years' data). Other issues of data comparability across years, such as the change over from 1990 to 2000 Census-based population controls, are more difficult to gauge; although the most recent change in controls have relatively little impact on summary measures (averages, medians, and percentage distributions) compared to the significant impact on 'levels' (U.S. Census Bureau 2009). Furthermore, as Passel shows, the accuracy of the 1994 and 1995 CPS to

the study of generational differences is poor and their inclusion in any pooled sample is suspect. Thus, the remainder of this inquiry sought to strike a balance between sample size and precision by pooling data from the 1996-2009 CPS.

Table 2.1 shows the 1996-2009 pooled counts for broadly defined national origin groups by first- and second-generation classifications, respectively. Following Farley and Alba (2002), second-generation respondents are identified by parents' national origins, and priority given to mother's country of birth when parents were born in different countries. For example, if an individual had both parents born abroad, then his or her origin is classified by the mother's birthplace. If the mother was born in the United States and the father was born abroad, then origin is attributed to the father's birthplace and vise versa. Although not shown in Table 2.1, determining origins for third- and higher-generation respondents in order to compare them to their first- and second-generation counterparts is more challenging. The CPS, unlike the decennial Census, does not ask about ancestry and thus origins of the third plus generation must be drawn from race/ethnic codes.[5]

[5] Studies have shown that only a select share of grandchildren of immigrants from Mexican and Latin America more generally identify as Hispanics (Alba and Islam 2009; Duncan and Trejo 2007). One possible mechanism for this identify shift is the increased rates of inter-ethnic marriage among older immigrant generations, thus blurring ethnic boundaries with each successive generation. Among Latino immigrants, for instance, Edmonston, Lee, and Passel (2003) estimate that only 8 percent of foreign-born Hispanics intermarry, compared to 32 percent of second-generation and 57 percent of third and higher generations. Intermarriage among Asians is estimated at 14%, 34%, and 54% for first, second, and third and higher generations respectively. For ethnic whites and blacks, on the other hand, intermarriage is projected much lower at 10%, 9%, and 8% for whites and 14%, 12%, and 10% for blacks across the first, second, three-plus generations. Consequently, identifying ancestry for three-plus generation immigrants using reported ethnicity generational trajectories among ethnic groups is an approximated heritage.

Table 2.1. Pooled Count of Respondents by National Origin and Generational Status from 1996-2009 IPUMS-CPS

National Origin	Total	Ages 25 and Older
Northwest European		
1st generation	8,607	7,814
2nd generation	22,479	17,396
South, Central, and East European		
1st generation	23,823	20,344
2nd generation	53,070	41,842
Asian/Pacific Islander		
1st generation	66,809	55,748
2nd generation	40,042	11,677
Mexican		
1st generation	91,631	67,937
2nd generation	79,912	19,370
Other Central American		
1st generation	23,020	17,989
2nd generation	15,151	2,548
South American		
1st generation	19,886	16,019
2nd generation	10,087	2,011
Caribbean		
1st generation	26,853	22,730
2nd generation	16,803	4,041
Other North American		
1st generation	5,844	5,015
2nd generation	15,213	11,791
African		
1st generation	7,080	5,469
2nd generation	3,790	642
Oceanian		
1st generation	631	494
2nd generation	702	331
Total	509,043	313,577

Overall, the counts of immigrants and the children of immigrants within geographic areas are generally robust. In the first column of Table 2.1, counts of the total pooled sample reflect historical streams of immigration to the United States. For instance, immigrants from Europe who arrived in large numbers prior to and immediately after the turn of the twentieth century have higher counts among the second-generation. Moreover, as we would expect, the numbers of Northwest Europeans are far lower than their South, Central, and East European counterparts who immigrated more recently. The newest immigrants from Asia, Mexico, and the Caribbean have the highest counts with the majority of respondents among the first generation. When counts are tallied for respondents 25 years of age and older, however, the youthful age structure of contemporary immigrants is clear as counts dramatically decline for those of the second generation for all non-European groups. Best among contemporary immigrants, 30 percent of second generation Asians are 25 years of age or older compared to 80 percent for older stocks of European immigrants.

These count trends illustrate why even a large sample produces relatively few observations for the study of contemporary assimilation. That is, many measures of social and economic progress necessitate a retrospective portrait of an individual's achievements, apparent only after reaching a particular age. To examine educational attainment, for example, restricting the sample to respondents age 25 years or older is reasonable as most people have completed their education by that age. For other socioeconomic outcomes, such as family formation or income, a higher age cut-off may be more appropriate. Raising the age threshold, however, has implications for the raw number of observations available for analysis, particularly the number of second-generation immigrants who are already a difficult-to-reach population.

Until now, the discussion has focused exclusively on the raw counts of respondents by time (birth cohort), generational status, and national origin. One final check on the soundness of a pooled CPS series is to compare population estimates from these new data to estimates from other sources. Although the March CPS is nationally

representative survey, it is not a simple random sample, and thus person weights for each year provided by the Census Bureau are applied to generate national estimates.

Available in Appendix A, Table A.6 compares national estimates from the 1996-2009 pooled CPS to the 2000 decennial Census and the American Community Survey (ACS), a nationwide survey conducted annually by the U.S. Census Bureau. Noted earlier, if the pooled CPS series is truly an average of the cross sections, then national estimates from this new data set should approximate other population estimates for years in and around the midpoint of the pooled data set. As such, a common set of demographic measures are drawn from the CPS and ACS for the years 2002 and 2003, and the 2000 Census. The cross-sectional years of the CPS address the internal consistency of the pooled sample. Also, to show the variation across years of the CPS, national estimates are drawn for the first and last year of the pooled series, 1996 and 2009 respectively.

Within the CPS data series, the demographic composition of the U.S. population has undergone a number of changes over the past fourteen years. The most visible shifts from 1996 to 2009 are the growth of the total population, aging of the population, and increase in the foreign-born population and representation of Hispanics and Asian/Pacific Islanders. As expected, weighted estimates from the pooled data set fall roughly between the 1996 and 2009 CPS estimates and approximate the values for the 2002 and 2003 years, the midpoint of the pooled data series. In comparison to the 2000 Census and ACS, the pooled population estimates and the midpoint years are nearly equivalent with the CPS and ACS only slightly underestimating projections for the total population and age structure based on the 2000 Census. Overall, the consistency of the pooled CPS data to itself (cross-sectional years) and estimates from other nationally representative data sources lend support to soundness of this new data set for studying the generational mobility among racial and ethnic groups

While the CPS is a valuable tool for studying the integration of immigrants to the American mainstream, the survey has its limitations as well. First, the CPS is a household survey of the non-institutionalized population and thus excludes, among

others, incarcerated persons and active duty military living in barracks in the United States. The overrepresentation of certain groups in institutionalized and non-household populations, such as the disproportionate rate of incarceration among black males (6 times) and Hispanic males (2 times) compared to white males (Sabol and Couture 2008) and exacerbated for those with low levels of education (Pettit and Western 2004), means these groups are likely underrepresented in the groups' counts.

Another issue, common to all surveys, is the nonresponse of eligible participants. In the 2009 March CPS, for example, the basic household-level nonresponse was 7.8 percent and the Annual Social and Economic Supplement rate was 7.0 percent for a combined supplemental nonresponse rate of 14.2 percent (U.S. Census Bureau 2009). The seasonal nonresponse rate is generally highest in March, and often attributed to the more burdensome income supplement survey. The issue of undercoverage in the sampling process (missed housing units and missed people within sample households) is another concern as it can lead to biased estimates for subpopulations where coverage tends to vary with age, sex, and race. For instance, while the 2009 March CPS estimates a total undercoverage of roughly 12 percent, estimates of males were 11% of whites, 23% of blacks, and 17% of Hispanics. Although CPS data are weighted to correct for undercoverage by age, sex, and race/ethnicity, the weighting adjustment assumes persons not interviewed in each subpopulation are the same as those persons who were interviewed—an assumption that is unlikely to hold true.

Despite these sampling shortfalls, the March CPS remains one of the richest and most reliable data sources for the assessment of socioeconomic change. For the study of immigrant incorporation, the survey's detailed information on the national origins of respondents and their parents and the ability pool years of data to build a larger base of respondents makes the CPS one of the only nationally representative data sets capable of tracking the progress of old and new immigrant groups over time. Although the complement of variables allows researchers to examine a variety of assimilation outcomes, the present analysis focuses on educational attainment.

Data and Analytic Approach

Using the 1996-2009 pooled IPUMS-CPS data and measures detailed in the previous section, this analysis examines the educational attainment of immigrants, their children and third and higher generations among national origin groups over the course of the twentieth century. My aim is to determine what these new data reveal about the patterns of integration for historical and contemporary stocks of immigrants and whether these trends are consistent with hypothesized patterns of immigrant assimilation. Thus, this investigation sets out to establish the types of trajectories that characterize the educational integration of different immigrant groups over time.

As defined earlier, measures of generational status include the first generation (respondents born outside the U.S. and outlying areas), the second generation (U.S.-born to at least one parent born abroad), and third and higher generation (native born to native-born parents). Since the CPS collects minimal information on respondent's year of immigration, classifications of generational status between the first and second are not possible.[6] The inability to determine the exact year of arrival also prevents the measurement of schooling of first generation immigrants in their native country for which the CPS does not directly collect either. Consequently, this analysis is unable to distinguish whether first-generation immigrants received any or all of their education outside the United States, despite evidence of assimilation differences between first-generation and so-called 1.5 generation immigrants in educational achievements (Glick and White 2003). As such, the educational attainment of the first generation is likely a reflection of selectivity than their success in the American educational system. While the CPS data supports an expanded definition of second generation immigrants differentiated between U.S.-born children to one U.S.-born parent (2.5 generation) and no U.S.-born parents (2.0 generation), for reasons of parsimony and because of small

[6] The CPS measures the year in which a person born outside the United States immigrated using a number of categories instead of the precise year of entry. Available for survey years 1994-2009, the earliest date of arrival identified is "before 1950" with other codes covering periods of two years, three years, and four years. To achieve comparability across survey years, the CPS recommends collapsing data into three period classifications: "before 1950", 'between 1950 and 1991", and "after 1991".

subgroup sample sizes I combine all second-generation groups. Appendix B discusses measurement of immigrant generations in the CPS data, including differences between the 2.0 and 2.5 generations.

Table 2.2 shows the aggregate differences in education across immigrant generations for the adult population 25 years of age and older. Converting CPS educational attainment categories into years of schooling,[7] generational status is differentiated by three birth cohort periods and the associated the year they turned twenty-one, giving us a better sense of the era in which they completed their education. For example, a person born in 1929 would have finished much of his or her schooling by 1950 or 21 years later, thus we can express year of birth and age of school completion as 1929/1950. In general, immigrants appear to experience rapid educational mobility, overcoming their ancestors' low levels of education upon arrival to achieve parity with the third plus generation by the second generation. Within each immigration era, the second-generation improvement is remarkably consistent even as attainment levels grow over time, increasing in mean years of schooling from the first to second generation by at least 1.7 years. A comparison between the second and three-plus generations for each period reveals a slight decline in years of schooling among long-term residents, indicating that the second-generation is somehow advantaged by having a foreign-born parent.

Although generational differences by these broad cohorts offer an interesting starting point, the circumstances that underlie incorporation are considerably more complex. First, the mystique of the assimilation process comes most immediately from immigrants' capacity for social mobility, which is embodied in their national origins. For example, there is great diversity in the socioeconomic status, cultural norms and behaviors, and other resources that specific immigrant groups bring with them from their native countries. Disparities in the status position among newcomers enables some

[7] The midpoint value is taken for each educational attainment category. CPS categories and corresponding midpoint values are as follows: 1st-4th grade (2.5 years); 5th -8th grade (6.5 years); 9th grade (9 years); 10th grade (10 years); 11th grade (11 years); 12th grade, no degree and high school graduate (12 years); some college (13 years); associate's degree (14 years); bachelor's degree (16 years); and professional & doctorate degrees (20 years).

groups to more easily adapt, while those who arrive in a lesser position may find socioeconomic progress more difficult.

Second, the conditions for successful integration are likely to vary gradually over time and the gains and losses that national origin groups experience will influence the prospects for newly arriving compatriots and their descendants. For instance, although education is a key factor for social mobility in the U.S., the level of education required by employers has steadily risen over time even though the relationship between credentials and job skills is thin (Collins 1979). As a result, newcomers near the top of the education ladder relative to their peers, other foreign- and native-born groups, are in a better position to achieve success and able to pass on their advantage to their later generations and future immigrants.

Finally, to complicate matters further, immigrant groups have come to the U.S. en masse at different times, for different reasons, and with varying levels of acceptance. The earliest waves of immigration arrived from Europe, first from Northern and Western Europe before 1880 and then from South, Central, and Eastern European thereafter until the early 1920s, followed by a second great influx of immigration from Latin America and Asia after 1965. These staggered arrival times make generational comparisons within and between groups difficult as aggregate measures, such as those in Table 2.2, are likely to conflate important, yet subtle temporal differences. A more precise approach, which this study implements, is to examine differential rates of generational change across narrower periods of time and by national origin groups.

Table 2.2. Generational Differences in Mean Years of Schooling for Birth Cohorts Subset into Three Periods of the Twentieth Century, Adults Age Twenty-Five Years and Older[a]

	Before 1929/1950		1930/1951 − 1964/1985		After 1965/1986		
	Mean	SD	Mean	SD	Mean	SD	N
1st Generation	10.02	5.16	11.84	4.53	12.15	3.92	219,559
2nd Generation	11.76	3.45	13.63	3.02	14.01	2.50	111,649
3rd Plus Generation	11.64	3.72	13.32	2.78	13.65	2.28	1,197,092
Total	11.52	3.86	13.16	3.11	13.40	2.73	1,528,300

[a] All means are weighted

To disentangle differences in social mobility, educational attainment is explored along three major stages of schooling in the United States: high school completion, college enrollment, and bachelor's degree or higher. Since 1992, the CPS began asking respondents about *their highest level of school completed or highest degree received*; a shift from previous years, which asked about highest grade or year of schooling. With emphasis now on earned credentials, the educational attainment classification scheme clearly identifies schooling beyond high school completion, distinguishing between categories of some college but no degree, associate degree, bachelor's degree, master's degree, and professional and doctorate degrees. For this analysis, college enrollment encompasses any type of postsecondary attendance, two- or four-year institutions, while bachelor's degree and higher includes postsecondary attainment of a four-year degree and above (hereon referred to as college graduation).

The CPS indictor for high school graduation, however, is less intuitive as the new classification system identifies completion of high school as either obtaining a high school diploma or an equivalent (such as the GED), and separate from a category of *twelfth grade, no degree*. The category's inclusion of both traditional and nontraditional high school finishers is conceptually troublesome given substantial differences among traditional diploma earners and equivalency holders with respect to future socioeconomic success (Cameron and Heckman 1993). Moreover, the CPS indicator is disconnected from the actual processes and activities that contribute to school completion, such as grade progression, enrollment, and dropout (Hauser 1997). For these reasons, high school completion, as a measure of adult educational attainment, is interpreted as an indicator of eventual high school graduation rather than events that occur while in school, such as dropping out.

In order to capture temporal differences, results of this investigation are presented as a series of line graphs tracing educational attainment over the twentieth century using twelve birth cohorts of five-year intervals across national origin groups. Classifying individuals by birth dates is a common approach when data include people at all levels of schooling, and provides a sense of the conditions at the time of schooling

(Fischer and Hout 2006; Mare 1995). As most people complete their education by age 25, the reported educational attainments of the various birth cohorts captured in the pooled CPS data provide a reasonable indication of the attainment experiences across more refined age groups (compared to Table 2.2). For example, the attainment of persons born in 1950-1954 shows the average educational experience of persons aged 55-59 and who likely completed formal schooling in the late 1970s and early 1980s. A notable limitation of this design is that estimates by birth cohort are affected by the fact that persons with more education tend to live longer than those with less education and that some persons return to 'complete' their education at older, nontraditional ages. Moreover, the tendency of older individuals to overstate their level of educational attainment is also a concern (Hauser 1997).

Nevertheless, the CPS data sets provide an informative view of the educational trajectories of the U.S. immigrant population over time, within and between national origin groups, and relative to the native white and black populations. Emphasis is placed on how these trends compare to hypothesized patterns of immigrant integration in general and across national origin groups, beginning with the achievements of the earliest stocks of immigrants from Europe and followed by the current socioeconomic progress of contemporary immigrants from Asia, Latin America, and the Caribbean.

Generational Trends in Educational Attainment

Figure 2.3 presents the trends in education attainment for the entire population by generational status for birth cohorts at the turn of the nineteenth century to the mid-1980s. On the whole, the trajectories of eventual high school completion in *Panel A* are generally flat among the three largest generational groups (first generation, second generation, and third or higher generation non-Hispanic whites), reaching a plateau starting with those born in the late 1940s and who likely completed high school in the late 1960s. Third generation non-Hispanic blacks (hereafter referred to as blacks), however, follow an S-shaped curve that is characteristic of the spread of cultural change

or ‘diffusion of innovation’ (Pemberton 1936; Rogers 1983). For other racial-ethnic groups, the acceleration of high school completion rates occurred earlier in the twentieth century (Mare 1995). Because of the truncation of birth cohorts before 1929, these trends are hidden in the current analysis. To be sure, the late upswing for blacks, from a low of 42 percent, is likely due to the legacy of racial discrimination that prevented blacks from equal participation in the educational system. The leveling-off of blacks’ completion rates for birth cohorts in the middle of the civil rights movement is evidence of this fact. For blacks born after 1964, high school completion remained at 88 percent, only 5 percentage points below their white, third-generation counterparts.

Across generational groups, we observe high school completion trends suggestive of the second-generation advantage. Specifically, second generation immigrants follow a near identical rate of completion as native whites of the three-plus generation. It is only among the latter birth cohorts that the second-generation begins to fall off the pace, yet continue to finish high school (eventually) at a 90 percent rate—slightly above native blacks. As for the first-generation, who receive most of their education in their country of origin, the average generational trend suggests that foreign-born adults, especially recent cohorts, do not fare as well educationally as second-generation or third- and higher-generation groups. These differences do not tell the whole story, however. The seemingly poor performance of the foreign-born population is likely overstated in that the first-generation includes new arrivals at each birth cohort along with those who have been in the United States longer. Consequently, it is unclear whether first-generation immigrants received any or all of their education outside the United States. Unfortunately, as I have already noted, the CPS collects a limited range of information on immigrants’ time of arrival and no measures of educational attainment received in the respondent’s country of origin. At best, these results suggest that first generation immigrants enter the United States, on average, with educational levels well-below even native blacks for birth cohorts after 1940 where eventual high school completion hovered around 70 percent.

To what extent to do these average generational trends hold for higher levels of educational attainment? Based on the trends for any college enrollment in *Panel B* of Figure 2.3, which also follows an S-shaped pattern suggestive of postsecondary expansion, the second generation edge is more distinct as postsecondary attendance exceeds that of whites by as much as 5 percentage points for most the century. With sustained college enrollment rates for second generation immigrants near 70 percent from 1945-1949 onward, native whites narrowed the gap only in the most recent cohorts. While college enrollment rates for the first generation remain decidedly lower than the second generation and three-plus generation whites, attendance was higher than native blacks until the late 1940s where enrollment converged at roughly 45 percent for the next two decades and then declined to 40 percent after 1965, while enrollment among blacks increased to a peak of 50 percent.

Yet, a more optimistic portrait of first-generation immigrants emerges when we examine the conditional probabilities of any college enrollment given high school completion (see Appendix C, Figure C.1).[8] Rather than a depressed pattern of postsecondary enrollment below that of blacks, first generation immigrants who eventually complete high school follow a trajectory of college enrollment similar to native whites. For instance, the probability of continuation for the first generation and third generation whites is 0.65 during the middle of the century. In fact, before 1934 the new arrivals had the highest probability of postsecondary continuation of all groups at 0.55. By 1970-1974, whites' probability of continuation surpassed the first generation to a peak of 0.70 in the most recent cohort while rates subsided for the foreign-born to a low of 0.61 during the same period. Reflective of the selectivity of immigrants to the United States, the disparate attainment trajectory among first-generation immigrants suggests the existence of two types of immigrants, a less

[8] Because the CPS measures educational attainment according to the highest level of completion rather than attainment at each level of schooling, the conditional probabilities of school completion assumes that all prior stages of schooling were successfully finished. For instance, for the attainment of some college but no degree, completion of a high school degree or equivalent is assumed given that most postsecondary institutions require satisfactory completion of a high school level education. For attainment of a bachelor's degree or higher, conditional probabilities presuppose postsecondary enrollment and high school completion.

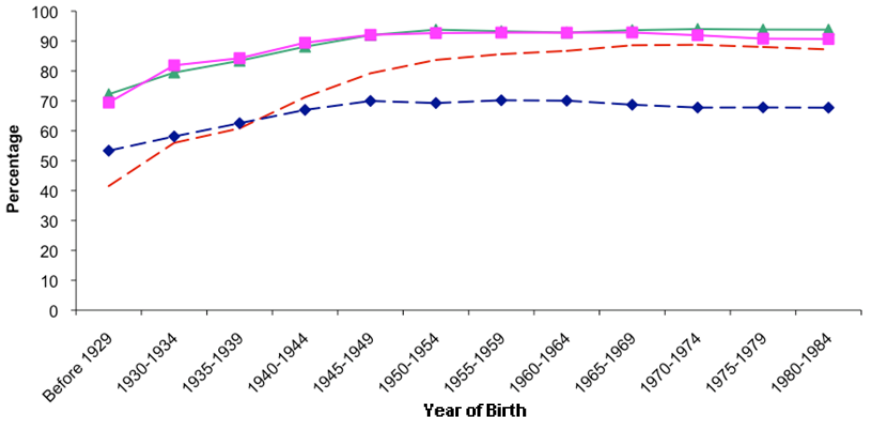
educated working class group and highly educated professional groups. Second-generation immigrants, as before, exhibit the highest rate of continuation for much of the century with a steady increase from 0.45 to 0.74. Blacks remain on the bottom with a near fifty-fifty chance that those who complete high school will transition to college.

Generational trends in college graduation in Figure 2.3, *Panel C* lend further support for a pattern of second-generation advantage as the proportion of bachelor's recipients or higher exceed the rates of both native-born groups and the first generation. As with college enrollment, second generation immigrants maintain a nearly 5 percentage point advantage in college graduation over native-born whites with over 35 percent of those born in the second half of the century receiving at least a four-year degree. Once again, native whites reach parity with the second generation in the most recent cohorts. Compared to native blacks, who have the lowest college graduation rates at roughly 15 percent across birth cohorts, the second-generation edge measures more than 20 percentage points.

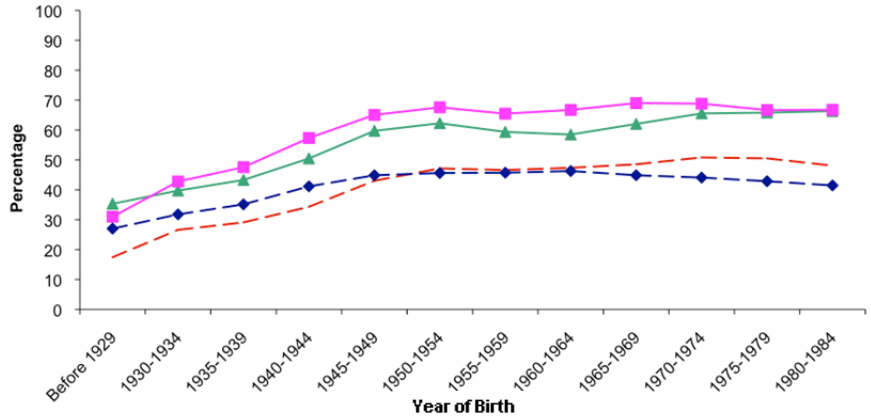
For first generation immigrants, college graduation rates largely overlap those of native whites throughout the early and middle part of the century, further suggestive of a bimodal distribution of immigrant selectively. Although foreign-born immigrants are unable to match whites' increasing graduation rates in the latter third of the century, their level of postsecondary success is particularly noteworthy when proportional college enrollment is taken into account (see Appendix C, Figure C.2). Relatively stable across cohorts in Figure C.2, approximately 60 percent of first generation immigrants, 55 percent of second generation immigrants, 50 percent of native whites, and 40 percent of native blacks who enrolled in postsecondary schooling ultimately completed a bachelor's degree or higher.[9] Thus, while the absolute levels of educational attainment indicate a clear second-generation advantage, relative measures suggest that first-generation immigrants who completed high school are more likely to have gone to college and earned a four-year degree or better.

[9] Unlike most groups, the probabilities of college graduation for native blacks decline over time to near 0.35, a roughly 0.07 point decline from the turn of the century. The cause of this decrease is unclear and beyond the scope of the present chapter.

Panel A: High School Completion



Panel B: Some College Enrollment



Panel C: Bachelor's Degree or Higher

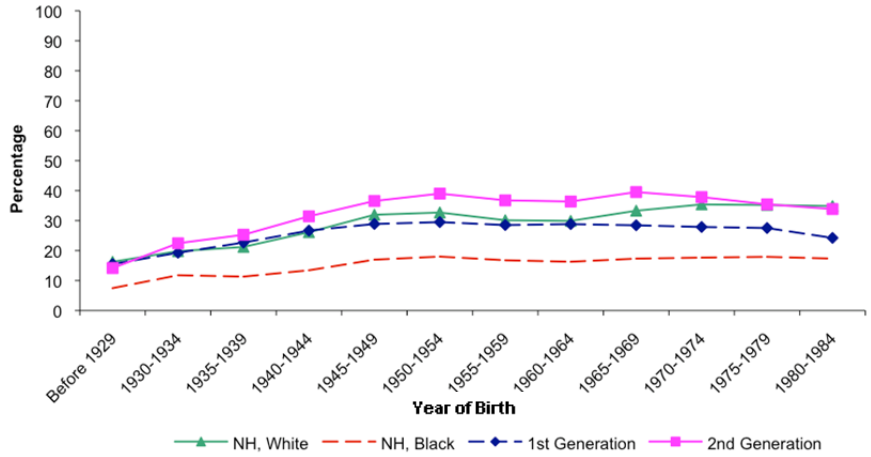


Figure 2.3. Educational Attainment Over the Twentieth Century, by Generation and Birth Cohort

So far, trends in educational attainment have captured the average generational experience. Consequently, observations of a second generation advantage may not represent a pattern of generational mobility indicative of all immigrant groups, at times characterized as a pattern of 'super achievement' (White and Glick 2009). The duality of educational attainment among first-generation immigrants is also suggestive of systematic differences within the foreign-born population. For instance, on the one hand, immigrants are a selective group and may come to the United States specifically to obtain further education. On the other hand, immigrants with humble backgrounds who lack educational opportunities in their country of origin and face economic and linguistic obstacles upon arrival may be unable to take advantage of the educational opportunities available in the United States.

To fully understand the differences in educational histories across generations, the next sections differentiate trajectories by major national origin groups—soon to be racial-ethnic groups—in the United States. According to the segmented assimilation perspective, historical variations among ethnic groups in their routes to educational incorporation reflect differences in the timing of immigration to the United States, socioeconomic resources upon arrival including educational opportunities in their countries of origin, access to schooling once they immigrate, receptivity of the native population, and group differences in the value placed on educational attainment. Thus, different racial-ethnic groups, who arrive with different capacities to succeed and encounter varying levels of acceptance, may differ markedly in their levels of attainment and in the rates at which their attainment levels grow. Immigrants arriving with an initial disadvantage and a less-than-welcome reception may follow a downward trajectory. The opposite would be true for warmly received immigrants. For the current analysis, a diversity of educational trajectories that differ substantially by the circumstances that minority and national origin groups confront would be suggestive of a segmented assimilation pattern.

European Immigrants

As the first settlers to the United States, arriving first from North-West (NW) Europe until the late 1800s and then from South, Central, and East (SCE) Europe thereafter until the passage of the Immigration Act of 1924, the European immigrant experience has been the subject of numerous studies on ethnic integration and the yardstick by which later waves of immigration have been measured. One of the most extensively studied areas in the adjustment process is the ethnic variation in schooling for newcomers and their children. At a time when child labor laws were weakly enforced and compulsory education requirements sporadic (Jacobs and Greene 1994), parents' decision on whether their children attended school and for how long depended on a variety of social, economic, and cultural forces (Tolnay and Bailey 2006). Of particular interest was how immigrants arriving at the turn of twentieth century from SCE European countries, who were largely unskilled, minimally educated, impoverished, and culturally foreign, both linguistically (non-English speaking) and religiously (Catholic and Jewish), compared to the achievement trajectories of older European stocks and native black population.

Prior research has demonstrated that, as a group, new European arrivals at the turn of the century attained lower levels of education than their more established immigrant counterparts arriving from NW Europe (Blau and Duncan 1967; Duncan and Duncan 1968; Hirschman and Falcon 1985; Jacobs and Greene 1994), much of it attributed to their modest socioeconomic background. Substantial inter-ethnic differences were also detected among SCE European countries where newcomers from Poland and Italy ranked the lowest in educational attainment. In contrast, immigrants of Russian ancestry and those of Jewish heritage had the highest levels of education (Duncan and Duncan 1968; Duncan, Featherman and Duncan 1972; Featherman and Hauser 1978; Tolnay and Bailey 2006). Inasmuch as educational attainment has increased across successive age groups, the rank ordering of countries remains generally the same.

Although these studies also explore inter-generational differences where NW European often equaled or exceeded the achievement of native whites by the second generation, Lieberson's book, *A Piece of the Pie*, is widely considered the definitive study of integration and mobility among SCE European and minority groups. Using a historical comparative approach, Lieberson sought to unveil why the descendants of early 20th century SCE Europeans are now nearly indistinguishable from the white Anglo-Saxon Protestant majority while the socioeconomic progress of blacks continues to lag behind. Despite the considerable discrimination and hardships both ethnic minorities faced at the turn of the century, he found educational attainment levels among new European groups followed a pattern of upward assimilation wherein each successive generation grew more similar to the dominant native population—consistent with the straight-line pathway. As a group, educational parity between second-generation SCE Europeans and native whites occurred after World War II (those born between 1925 and 1935), although some national origin groups, such as the children of Russian immigrants and presumably of mostly Jewish heritage, enjoyed an educational advantage before then. For blacks, the pace of educational attainment over time progressed at a much slower rate. These educational differences persist, albeit to a lesser degree especially for black women, even when comparisons were restricted to northern-born blacks of southern migrants (a pseudo second-generation) where opportunities for education was analogous.

Relatively little is known, however, about the continued trajectory of European newcomers over the remaining half of the century. To fill this gap, Figure 2.4 extends the work of Lieberson and others on the long-range educational incorporation of NW and SCE Europeans and their descendants relative to three-plus generation whites and blacks over cohorts born between 1929 and 1984. Over this period, all race-ethnic groups experience the increasing rates of school completion observed in the population as whole, although the level and rate of attainment varies among them.

For high school completion (*Panel A*), differences between groups remain substantial for cohorts born at the turn of the century and steadily narrow over time as

the rate of secondary school completion reaches a level of saturation. Carrying over from the previous century, the pattern of disparities among racial-ethnic groups at the beginning of this period favor those of NW European descendent, both first and second generations, who had the highest percentage of completion at nearly 80 percent, slightly above native whites (presumably a group with a substantial NW European presence). The education advantage of old immigrants over native whites persisted throughout the century, the greatest disparity occurring for those born in 1930-1934. For much of the time, NW European immigrants and their children enjoyed an advantage of several percentage points with completion rates above 95 percent.

In contrast, first generation immigrants from SCE Europe had the lowest level of attainment among ethnic whites with 58 percent completion for those born at the start of the century, yet achievement rates above native blacks (42 percent). Between cohorts born in 1930 and 1984, the rate of eventual high school graduation grew from approximately 65 percent to more than 90 percent, equaling the attainment of whites by the 1965-1969 cohort. Despite the lesser socioeconomic resources of SCE Europeans upon their arrival, the second generation had completion rates in excess of native whites by the 1930-1934 birth cohort, consistent with Lieberson's finding of SCE European-native white parity following WWII. Corresponding to a pattern of second-generation advantage, trends in completion remained above the native white population for the duration of the century and eventually intersecting with NW Europeans

Trends in college enrollments among ethnic whites in *Panel B* of Figure 2.4 follow a similar trajectory to those observed for high school completion.[10] For instance, NW Europeans continue to outpace all other groups where college attendance rates swiftly and steadily increase from as much as 40 percent at the turn of the century to over 85 percent for those born in the 1980-1984 cohort. The pace of college going

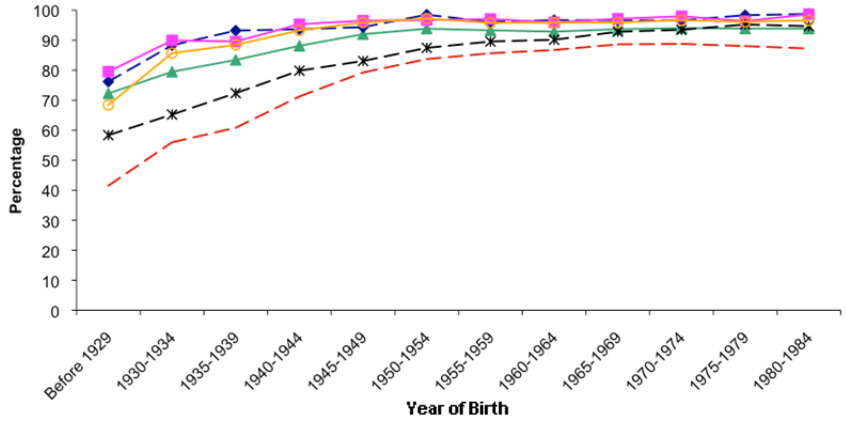
[10] Given the near universality of high school completion in the latter cohorts and the equivalence of the trajectories between high school completion and college enrollment, the pattern of conditional probabilities for postsecondary enrollment among ethnic whites tell a similar story (see Appendix C, Figure C.3). One noticeable difference, however, is the change in the level of racial-ethnic disparities over time where differentials in the probabilities of college continuation were greater among more recent cohorts. In the early 1900s, overlap among groups was substantial with the greatest change for native blacks whose relative likelihood of college going was in-line with other ethnic whites.

among first generation NW Europeans is particularly pronounced for those born after the 1955-1959 cohort as rates exceeded their second-generation counterparts—suggestive of a change in the types of new arrivals. Likewise, first-generation SCE Europeans, whose rates of enrollment were consistently below whites for the first half of the century, surpass the majority population permanently with a boost in attendance from the 1960-1964 cohort. As for second-generation immigrants from SCE Europe, they sustain their attainment edge over native whites that began with the 1930-1934 cohort, and achieve college enrollment levels similar to their second-generation NW European counterparts throughout the period.

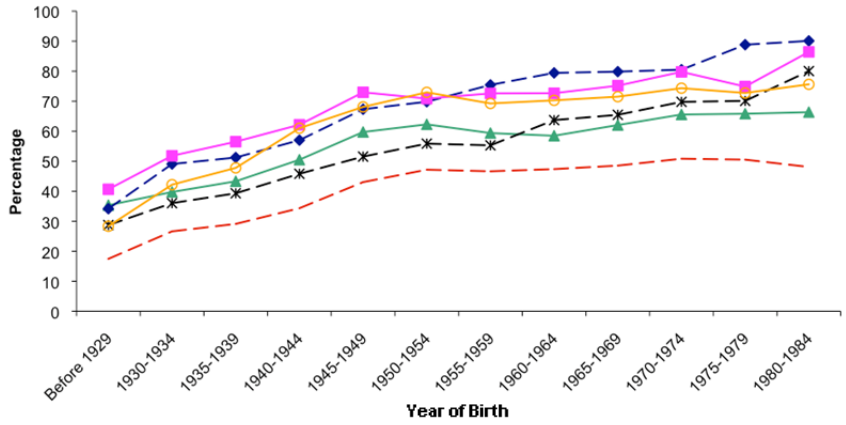
The attainment trajectories of a bachelor's degree or better in *Panel C* of Figure 2.4 offer a similar, yet more dramatic picture of generational change. Unlike the uniform trajectory observed for lower levels of educational attainment, the size and pattern of disparities in college graduation among racial-ethnic whites varies substantially over time. Early in the century, racial-ethnic differences were relatively compact; within a range of 10 percentage points with the highest rates for second-generation NW and SCE European immigrants (as much as 40 percent) and the lowest among native whites (as much as 30 percent).[11] By the 1950-1954 birth cohort, all European immigrants were outperforming native whites, the last to surpass being first generation SCE Europeans—occurring a decade earlier than for college enrollment. From this point forward, graduation rates among first-generation immigrants, especially NW Europeans, increased rapidly to a remarkably high 75 percent for those born in the 1980-1984 cohort. For first generations SCE Europeans, college completion ultimately surpassed their second-generation counterparts of both regions to a high of over 55 percent. As for the trajectory of second-generation groups, growth is modest over the second half of the century, although preserving a roughly 10-percentage point advantage over native whites.

[11] In comparison, less than 20 percent of native blacks attain a four-year degree or higher during this time.

Panel A: High School Completion



Panel B: Some College Enrollment



Panel C: Bachelor's Degree or Higher

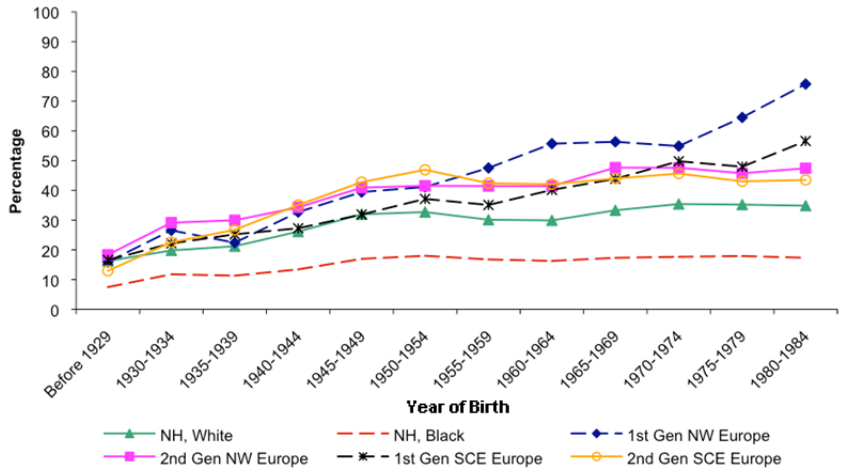


Figure 2.4. Educational Attainment Among Ethnic Whites Over the Twentieth Century, by Generation and Birth Cohort

As with college enrollments, the sudden surge of first generation European college graduates in the second half of the century indicates a shift in the composition of immigrants arriving from Europe. This pattern of immigrant advantage persists even when postsecondary enrollment is taken into account (see Figure C.4 in Appendix C); particularly for persons arriving from NW Europe whose probability of bachelor's degree was over 0.80 in the 1980-1984 birth cohort. The trajectory of first generation SCE Europeans is also above both second-generation groups with probabilities of college graduation upwards of 70 percent. Because the CPS does not collect information on schooling outside the U.S. or the reasons for international migration, the rationale for this mid-century influx of highly educated Europeans is unclear.

A possible explanation for these first-generation trends, however, is the loosening of immigration laws in 1965, which abolished restrictive immigration based on national origins in favor of a quota and preference system. Under the new law, an aspiring immigrant must clear three major hurdles. First, the immigrant must satisfy one of the six preference categories, which prioritized reunification of immediate family members above all else, followed closely by persons deemed by the U.S. Department of Labor as professionals, scientists, or artists of "exceptional ability" (United States 1965, pg. 913). Second, there must be a preference quota spot available as only a limited percentage could come from each category. Finally, for countries in the Eastern Hemisphere, one of the sending country's 20,000 per year quota slots must be open, although children under 21 years of age, spouses, and parents of U.S. citizens were exempt. Nations in the Western Hemisphere were not subject to any quotas.

With these restrictions in mind, few NW European immigrants in the U.S. during this era, relative to other groups, had immediate family members abroad who had not already migrated. Moreover, economic conditions across Europe had greatly improved in the decades after WWII, providing little incentive for Europeans to immigrate elsewhere. As such, it is plausible that the bulk of new European immigrants, much fewer in number than in years past, would arrive after 1965 by way of extraordinary abilities (employment-based preferences), and likely holders of advanced

educational degree.[12] Once established as permanent residents, individuals may have then petitioned for their families to immigrate as well. For SCE European immigrants, whose arrival was more recent, family reunification may have been a more likely channel for post-1965 immigration, and thus a less dramatic increase in first-generation attainment levels. Unfortunately, historical records of immigration by class of admission and region are not readily available from the U.S. Census Bureau or other Federal agencies during this period.

Nevertheless, the observed trends indicate that the European immigrant experience follows two distinct patterns of assimilation over time. For cohorts born in the first half of the century, second-generation immigrants from both European regions attained educational levels in excess of their first-generation counterparts and the native-born populations, although marked by overall NW European dominance. This second-generation advantage endured with some tapering for all levels of secondary and postsecondary schooling. In contrast, for cohorts born in the 1950s and 1960s, attainment levels for first generation European immigrants outstripped their second-generation equivalents and continued to outpace them across each successive cohort. This foreign-born advantage is especially prominent for college graduation and, in particular, among newcomers from NW Europe. The trajectory of college graduation for European immigrants is noteworthy for the number of groups that thrived over the period: native whites and second-generation SCE and NW Europeans, respectively. The high socioeconomic status upon arrival, however, appears to diminish across generations, suggesting some downward mobility or regression to the mean.

Newcomers from Asia

While the Immigrant and Nationality Act of 1965 had a minor impact on the already declining volume of immigration from Europe, the law's passage reversed

[12] It also stands to reason that some European immigrants came to the United States specifically for the purposes postsecondary education where access to colleges and university is much greater.

decades of systematic exclusion and restrictive immigration policies resulting in unprecedented numbers of immigrants from Asia, Mexico, Latin America, and other non-western nations. Frequently referred to as post-1965 immigrants, the immigration histories of these newcomers actually began decades earlier, and unfolded differently for each ethnic group.

The history of Asian Americans prior to 1965 is a classic story of ethnic antagonism (Bonacich 1972) wherein Asian immigrants (the Chinese at first) arriving in the early 1800s were tolerated as a source of labor working as miners and contracted laborers during the California Gold Rush years and later recruited to work on the Transcontinental railroad in 1865. They later entered self-employment in agriculture and other fields because of discrimination in the general economy. By the late 1800s, however, the influx was too much for the native population whose earnings were undercut by Asians willing to work in unfavorable conditions and for low wages, and eventually competing against whites for skilled occupations. In response to growing anti-Chinese sediment and escalating hostilities, the U.S. government passed the *Chinese Exclusion Act* in 1882, which restricted all Chinese skilled and unskilled laborers from entering the country, tightened provisions for the departure and reentry among settled immigrants, and denied Chinese immigrants from obtaining U.S. citizenship. The Act's passage, renewed at ten-year intervals, marked a prolonged period of Asian isolation both domestically and abroad by stifling their integration into American society and severing ties to their homeland and, in many cases, their families who resided in the native land.

Amid the restrictions directed against Chinese immigration, the United States increased contact with Japan during the rise of the sugar industry in Hawaii and with the Philippines following the Spanish-American War at the end of the ninetieth century prompted immigration flows from these regions. Once again, immigrating groups were initially welcomed as an inexpensive source of unskilled agricultural laborers and a substitute for Chinese workers in California. However, as this latest group of newcomers began to ascend the socioeconomic ladder, becoming businessmen and

entrepreneurs, threat (real or perceive) to the white American standard of living spurred anti-Asian sentiments once more. By 1924, overwhelmed by the ever-growing influx of immigrants, the U.S. government passed the *Johnson-Reed Act* (or *1924 National Origins Act*) which halted all immigration from Asia and other countries in the Eastern Hemisphere and introduced a national origin quota system to limit immigration from southern and eastern Europe. Until the late 1960s, immigrants of Asian ancestry, like their Chinese counterparts earlier, would live and work in relative isolation, yet made considerable socioeconomic progress in the face of tremendous discriminatory actions.[13]

The changes to U.S. immigration policy in 1965 through the Hart-Cellar Act marked a historic moment for Asian Americans as its passage reopened immigration from all countries in the Eastern Hemisphere. With a resumption of immigration, long-term Asian residents (including the brides of U.S. servicemen) made extensive use of the family reunification provision which enabled them to send for their immediate relatives, a channel exempt from numerical limitations. Between 1966 and 1977, Wong and Hirschman (1983) found that nearly 60 percent of immigrants from the Eastern Hemisphere arrived through the 'exempt' family criterion, especially among the Japanese and Koreans. However, for the Chinese, who had immigrated earlier, family unification was utilized by less than 40 percent of new arrivals and declined to 20 percent in the late 1970s. Instead, a large share of Chinese entered the United Stated under the Relative Preference category (roughly 40 percent), where immediate relatives (sons/daughters and their spouses) over 21 years of age were required to enter through the quota system. Admission through the Occupational Preference category—exceptional occupational skills—was a key channel of arrival for newcomers from Korea, India, Japan and Philippines. The most extreme case was among Indian immigrants with 70 percent of newcomers admitted for scarce occupational skills in the early years of the 1965 Act compared to an average of 25 percent for Asian immigrants.

[13] The most vivid example is the forced relocation and interment of over 100,000 Japanese Americans in 1942 by the U.S. government following Japan's attack on Pearl Harbor.

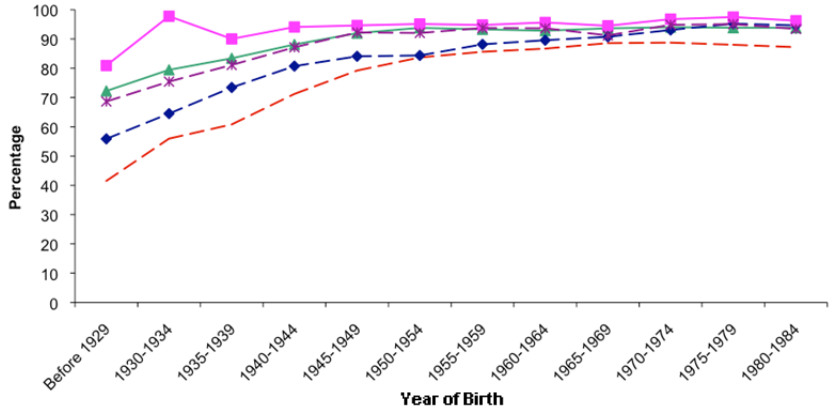
In sum, Asian Americans have come to represent a sizable segment of the American population made up of a successful and well-integrated base of long-term residents and a steady stream of highly educated newcomers. Although integration has varied among groups of Asian ancestry, as one large undifferentiated group, Asian Americans have achieved substantial social mobility (see, for example, Hirschman and Wong 1984; Hirschman and Wong 1986; Rong and Grant 1992). The remarkable rates of vertical mobility achieved by Asian populations in this country led to their classification as a 'model minority'. The term is often attributed to an 1966 article written in the *New York Times Magazine* by sociologist William Petersen entitled "Success Story: Japanese-American Style". Petersen argued the Japanese culture, which stressed family values and hard work, enabled them to overcome racial discrimination and achieve socioeconomic success, rather than becoming a 'problem minority'. Gradually, the model minority thesis was broadly—and stereotypically—applied to all Asians. In truth, while early Asian Americans had gained a high level of social acceptance, they continued to experience discrimination throughout the 1960s and 1970s, particularly in the workplace where returns to schooling were less than the majority population (Barringer, Takeuchi and Xenos 1990; Wong 1982).

As Figure 2.5 indicates, however, the threat of lesser income or occupational status compared to other groups with similar levels of education has not deterred Asian Americans and Pacific Islanders from pursuing education. In fact, rates of educational attainment among native- and foreign-born Asians are generally equal to or above that of native whites for much of the century, particularly postsecondary enrollment and college graduation. Only the pace of high school completion among the first generation was consistently below whites prior to the 1960s birth cohorts, although rates were above those of blacks. For instance, the percentage of first generation Asian immigrants who completed at least a high school education increased from about 55 percent for cohorts born at the turn of the century to about 90 percent or greater for cohorts born after 1955, a trajectory nearly identical to first generation immigrant from SCE Europe. Among non-Asian native groups over the same period, the percentage of whites who

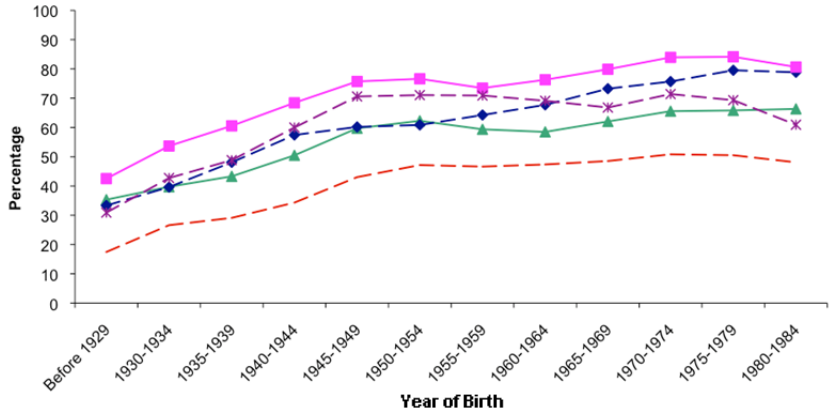
completed secondary schooling increased from roughly 70 percent to over 90 percent while rates for blacks rose from 40 percent to as much as 90 percent. For native-born Asians, the second-generation achieves the highest rates throughout the period with high school completion already near 90 percent at the start of the century—akin to immigrants of NW European descent. By the third-plus generation, the pace of high school completion settles to a level comparable to that of native whites.

At the college level, trends in the rate of attainment follow a similar generational pattern as those observed for high school completion; but within each cohort, the differentials are much greater. For college enrollment, second-generation Asians outpaced both their native- and foreign-born counterparts as well as native whites and blacks, increasing from roughly 40 to 80 percent enrollment over the course of the century compared to a change of 35 to 65 percent among native whites. Between these upper and lower bounds, the pace of college-going among first-generation and three-plus generations Asians weave back and forth—first favoring long-term residents for cohorts born in the middle of century and then newcomers for those cohort in the latter half of the period. Even when factoring in rates of high school completion, the generational ordering of postsecondary enrollment remain unchanged where at least 70 percent of Asians born after 1940 who completed high school, later enrolled in college (see conditional probabilities in Appendix C, Figure C.5). Overall, the attainment trajectory of Asians in advanced schooling reveals a distinct second-generation advantage pattern over much of the century for both absolute and conditional rates of postsecondary enrollment. Moreover, rates of postsecondary attendance among Asians surpass that of the native white population and rivals the extraordinary pace of enrollment observed among NW and SCE Europeans (see Figure 2.4).

Panel A: High School Completion



Panel B: Some College Enrollment



Panel C: Bachelor's Degree or Higher

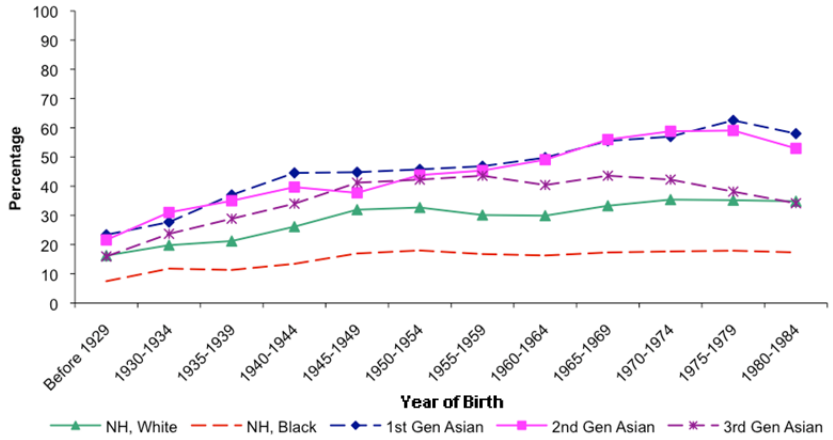


Figure 2.5. Educational Attainment Among Asians/Pacific Islanders Over the Twentieth Century, by Generation and Birth Cohort

As *Panel C* in Figure 2.5 shows, trends in college graduation rates for native- and foreign-born Asians continue the pattern of educational supremacy over native whites and blacks throughout the century. For instance, Asian cohorts born during the middle third of the century (1935-1969) complete four or more years of college at a minimum of 10 percentage points higher than native whites and 25 points higher than native blacks over the same period. Among Asians, first- and second-generation immigrants have the highest absolute college graduation rates with nearly 60 percent of post-1960 birth cohorts earning a bachelor's degree or higher. Prior to the 1960 birth cohort, Asians across all generations complete college at roughly the same rate while thereafter, the third and higher generation peak at slightly above 40 percent and steadily decline to rates near native whites at 35 percent by the 1980s.

Unlike the generational trends for high school completion and postsecondary enrollment, there is no distinct Asian second-generation advantage for rates of college graduation. In fact, suggestive once more of the bimodal selectively of immigrant streams to the United States, first generation Asian immigrants have college graduate rates equal to or above more established groups – both of native and foreign origins – even though a sizable segment only complete high school education. The exceptionally high educational attainment of certain streams of Asian newcomers is most evident by their conditional rates of college graduation in which roughly 70 percent of college enrollees attained a bachelor's degree or higher (see Appendix C, Figure C.6)—ethnic and native whites and later generation Asians have conditional rates of 60 percent or less over the same period. This group of educated Asian immigrants lies in stark contrast the minimal educational qualification observed for high school completion rates, particularly among those born in the early part of the century (see *Panel A* in Figure 2.5). The selectivity pattern observed among Asian immigrants is consistent with early studies that report Japanese immigrants to the U.S. mainland were of higher social class and wealth than those who went to Hawaii seeking opportunities in agriculture (Ichihashi 1932; Peterson 1971). It is likely that such educational advantage enabled newly arriving Asian immigrants to sponsor their children's upward mobility as

evident by the high rates of educational attainment detected among the second generation.

The image of Asian-Americans as a 'model minority' is driven largely by the groups' remarkable educational attainment and socioeconomic success. Their high socioeconomic standing, however, is often compared to the lesser achievements of blacks and Hispanics rather than the educational trajectories of ethnic whites who, as the earliest immigrant streams and virtually indistinguishable from the native population, provide an upper bound comparison. As this analysis shows, the pace of Asians' educational incorporation over the century is near parity with that of European arrivals. Consistent with observed trends for high school completion and college enrollment, rates of four-year college completion among Asian/Pacific Islander generations are greater than or equal to European immigrants for virtually all birth cohort during the twentieth century, especially with respect to immigrants from SCE Europe. Even when holding college-going constant, Asians and ethnic whites sizably exceed the 50 percent college graduation rate observed for native whites for much of the period. In short, foreign- and native-born Asians have achieved an exceptionally high level of educational attainment across all age groups of the twentieth century and relative to native and ethnic whites, although some deterioration is detected among younger three plus generation Asians.

Although the model minority image of contemporary Asians is pervasive in American society, research has increasingly challenged such portrayals by demonstrating that the Asian population is not uniformly advantaged educationally. Instead, compositional differences among Asian groups account for a great deal of the variation in socioeconomic outcomes (Hirschman and Wong 1981). Kao (1995), for instance, found that while the Asian/Pacific Islander population as a whole excels academically relative to whites, Chinese, Koreans, and South Asian students are especially well-positioned to succeed in school where family background and the utilization of resources account for much of the variation in achievement. Pacific islanders and Southeast Asians, on the other hand, are educationally disadvantaged

relative to whites and other Asian ethnic groups due to their lesser socioeconomic background and educational aspirations.

In addition to variations among specific Asian-American nationality groups, the findings of this analysis further highlight the heterogeneity of the Asian population by showing important generational differences in educational attainment among immigrant and native-born populations over time. Discussed elsewhere, first generation Asian immigrants are an educationally diverse group, as trends in educational attainment across birth cohorts reveal high school completion rates less than native whites, especially among older cohorts, while college enrollment and four-year degree completion exceed those of the majority population. It has been theorized that the selectivity of immigrants along with the resolve required of the immigrant experience itself, equips newcomers and their children with the skills and motivation to take full advantage of socioeconomic opportunities (see, for example, Borjas 1991; Feliciano 2005).

However, the second-generation, inheriting their parents' ambitions and free from many of the barriers to upward mobility faced by newly arriving immigrants, are thought to have the greatest chances of success. Indeed, the results of this analysis reveal that second-generation Asians are educationally advantaged throughout the twentieth century relative to other generations and the native-born white population, particularly in high school completion and college enrollment. Although, trends for college graduation show no apparent second-generation edge, native-born children of immigrants maintain virtually the same elevated rates of four-year degree attainment as their first-generation counterparts. As for third and higher generations, who maintain parity with first and second-generation immigrants for much of the century and have rates above native whites, college completion rates suddenly decline beginning with the 1960-1964 cohort. A possible explanation for this post-second generation decline is that acculturation to the American mainstream negatively affects academic achievement wherein the motivations for upward mobility of their ancestors lessens over time (i.e., regress to the mean; native whites). On balance, Glick and Whites' (2004) analysis of

the NELS – a nationally representative cohort of eight grade adolescents in 1988 – found that not only did educational expectations diminish across generations, but that these differences explain some of the variation in educational attainment across generations, especially among Asian immigrants. This finding indicates a need for further research on how expectations account for educational differences among Asian-Americans and, more generally, generational differences among other ethnic immigrant groups.

Mexican, Latin American, and Caribbean Immigrants

If popular perceptions currently hold Asians as the ideal minority group, then the Hispanics are seen in the opposite light. Perceived as taking more of society's resources than they contribute, immigrants of Hispanic descent are often characterized as lazy and uneducated, displacing native workers, a burden on the social welfare system, and illegally residing in the United States. Such a crass generalization, however, misrepresents Hispanic immigration to the United Sates in several ways. To start, Hispanic immigrants are a diverse group; not only in national origins, arriving from Latin America, South America, and other Spanish speaking countries in the Caribbean, but also in their socioeconomic status upon arrival. For instance, Cuban refugees, the earliest waves arriving in the 1960s following the Cuban revolution, were mostly members of the economic elite, educated professionals and managers (Fagen, Brody and O'Leary 1968; Pedraza-Bailey 1985). Immigrants from Mexico, by contrast, have more depressed socioeconomic backgrounds, reflected in lower levels of education, occupational status, and income attainment (Duncan and Duncan 1968; Featherman and Hauser 1978). Clustered at the lower end of the educational and occupational hierarchies, Mexican immigrants in the United States have been a primary source of low-wage and unskilled labor (Portes and Bach 1985).

As the largest subgroup of Hispanic immigrants, the Mexican experience is the dominant paradigm of immigration from the Americas, although the history of their

arrival is often overlooked. The origins of international migration between Mexico and the United States date as far back as the 1850s during the era of Western Expansion when territories of modern-day California, Arizona, Nevada, New Mexico, Utah, Texas, and parts of Colorado and Wyoming were ceded to the U.S. as part of the Treaty of Guadalupe Hidalgo which ended the Mexican-American War. For the next fifty years, migration along the Mexico-U.S. border was largely disregarded as the region remained sparsely populated and movement limited to short, localized trips between now-divided communities (Massey, Durand and Malone 2003). Instead, Federal attention was fixated on the droves of European immigrants who flooded cities in the northeast and growing population of Asian newcomers in the west. Permanent and sustained immigration from Mexico to the U.S. would not emerge until the early twentieth century.

Mass immigration from Mexico began as restrictive policies of the 1920s, such as the 1924 National Origins Act, which closed off immigration from traditional sources of unskilled labor in Asia. Exempt, however, were countries in the Western Hemisphere. Thus, at a time of rapid economic expansion in the southwest and labor shortages in railroads, mining, agriculture, and construction, employers turned to low-wage laborers in Mexico (Portes and Bach 1985). Yet, in dire need of workers, employers actively sought out Mexican laborers by sending recruiters across the border. The result was a surge in the number of immigrants from Mexico, increasing from 50,000 during the first decade of the twentieth century, to 220,000 in the second, and 460,000 by the 1930s (U.S. Department of Homeland Security 2006). Between 1931 and 1970, roughly the years of restrictive and prohibitive U.S. immigration, nearly 850,000 Mexican immigrants had entered the United States.

To be sure, the open door policy for immigrants of the Western Hemisphere amid bans elsewhere shifted mass entry to the Americas. For instance, in the 1900s immigration from the Americas amount to less than 5 percent of all new arrivals compared to 90 percent coming from Europe. By the 1930s, immigrants from the Americans made up 37 percent while the European flow declined to 60 percent. During

what Massey (1995) calls the 'hiatus period' of U.S. immigration (1931-1970), when immigration levels averaged 185,000 annually, the share of immigrants from the Americas eventually surpassed those from Europe whose numbers steadily declined throughout the century. Among countries in the Western Hemisphere, a third of all immigrants from the Americas entered through Canada during this period. While Mexico is the single largest sender among Hispanic countries with 25 percent arriving between 1931-1970, other Latin American countries collectively account for over 40 percent—a substantial proportion coming from Cuba, Dominican Republic, and Columbia, particularly in the latter half of this period. Thus, one cannot speak about the long-term residents of Latin American descent (i.e., Hispanics of third and higher generations) as a purely Mexican experience.

Although the passage of the 1965 amendments of the Immigration and Nationality Act is commonly associated with a new era of immigration by abolishing the discriminatory quota system and ending the ban on Asian entry, it also introduced the first numerical restrictions to immigration in the Western Hemisphere. Under the Act, an annual limit of 120,000 immigrants from the Americas was permitted to enter the United States, but no country limits or preference system was imposed.[14] Instead, visas were issued on a first-come, first-serve basis until 1976 when changes extended the preference system and 20,000-per-country limit to the Western Hemisphere. More than restricting entry, these changes halted the once free and U.S.-sanctioned movement of Mexicans between the two countries; a boundary now guarded by border patrols and designated points of entry.

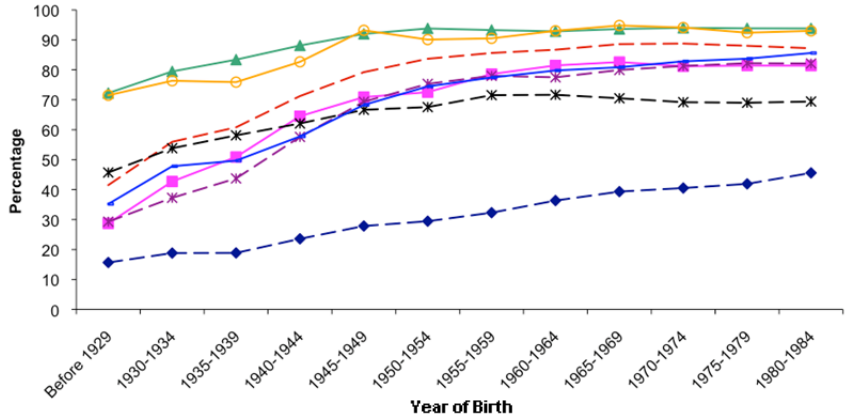
Seeking relief from their economic problems and a willing employer in the agricultural and budding service industries of the United States, many Mexicans and other Latin Americans of humble origins opted to cross the boarder illegally. Since traditional channels of immigration often involved a lengthy waiting period of several years, especially for applicants from countries of high immigration demand, entering and remaining in the United States unlawfully was very likely born out of necessity.

[14] Non-quota immigrants and immediate relative (i.e., spouses, minor children, and parents of U.S. citizens over the age of 21) were not counted as part of hemispheric ceiling.

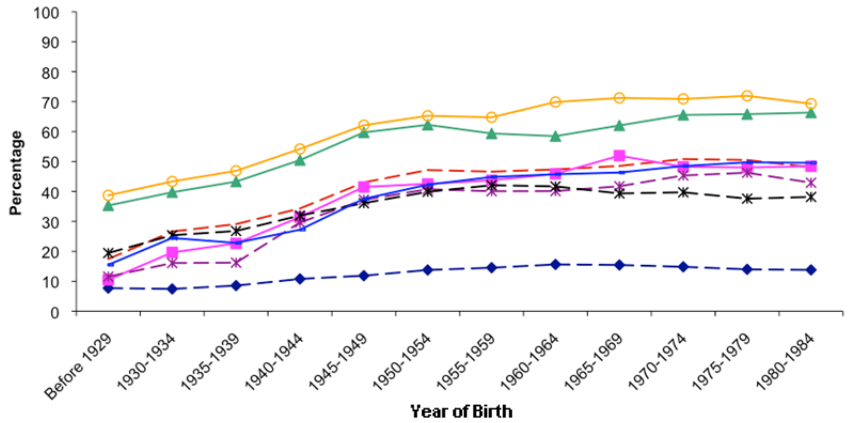
The result was a dramatic increase in the number of deportable aliens, a group that included an overwhelming number of Mexican nationals. For instance, during the first three years that the 1965 amendments were implemented, the number of illegal Mexican aliens apprehended rose from 90,000 in 1966 to 108,000 in 1967 and 152,000 in 1968 (U.S. Department of Justice 1966-1969). Over the next thirty years, the number of unlawful Mexicans detained rose steadily from 202,000 in 1969 (70 percent of all violators) to 693,000 in 2009 (88 percent) (U.S. Department of Homeland Security 2009). The actual number of undocumented immigrants currently living in the United States, however, is unknown. A recent estimate by Passel (2005) places the number near 10.3 million as of 2004 with roughly 57 percent of Mexican origins compared to 24 percent other Latin American, 9 percent Asian, 6 percent European and Canadian, and 4 percent other. Thus, while Mexicans are overrepresented among illegal immigrant population, they are not alone.

All told, stark disparities in the standard of living between Mexico and the United States, a U.S. economy heavily dependent on low-wage laborers, and a relatively permeable international border two thousand miles long represent important instigating forces responsible for Mexican migration over the past two centuries (Massey, Durand and Malone 2003). Whether in the U.S. legally or illegally, Mexicans and other Latin American immigrants, like those of poor social origins before them, perform work vital to the U.S. economy and an American way of life, but considered undesirable by the native workforce. Unlike earlier immigrant groups, however, the proximity of their national origins enable many to work in the United States without establishing permanent residence, making frequent trips back and forth (Portes and Bach 1985). It is unclear how these factors affect the assimilation trajectories of Mexican immigrants into the American mainstream and how their inter-generational mobility compares to other Latin American arrivals from more developed nations.

Panel A: High School Completion



Panel B: Some College Enrollment



Panel C: Bachelor's Degree or Higher

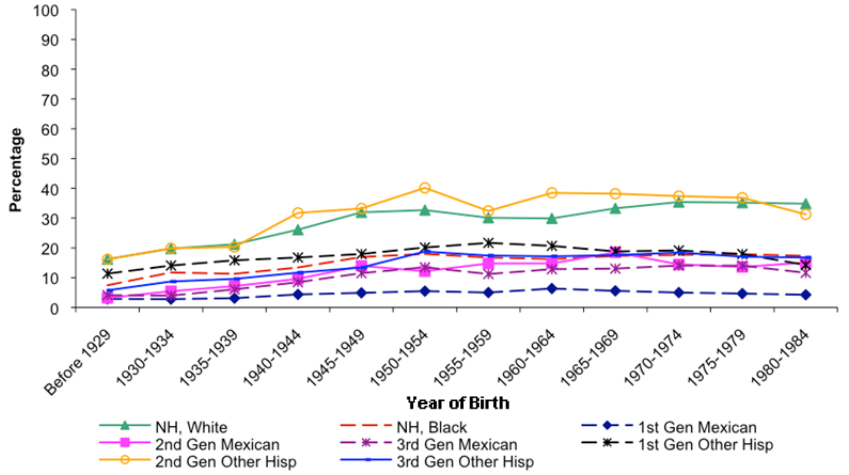


Figure 2.6. Educational Attainment Among Mexicans and Other Latin Americans Over the Twentieth Century, by Generation and Birth Cohort

Since education is a key mechanism for social mobility in the United States, it follows that we return once more to immigrants' attainment trajectories in order to gauge their socioeconomic progress. Figure 2.6 shows the educational attainment of Mexican and other (non-Mexican) Latin American immigrants across generations and between birth cohorts. The attainment levels among Hispanics, unlike European and Asian immigrant groups, are substantially lower relative to the native white population and show far greater variation between ethno-generational groups. Consistent with prior reports, first-generation Mexican immigrants complete the fewest levels of schooling among Hispanics as well as other major racial-ethnic groups in the United States. For instance, high school completion rates in *Panel A* show that fewer than 50 percent of foreign-born arrivals from Mexico have a high school education or greater, a figure that favors recent birth cohorts. Among older cohorts, completion rates are a remarkably low 15 percent for turn-of-the-century cohorts and increase to approximately 30 percent for cohorts born over the next fifty years. As a comparison, nearly 70 percent of native whites and 40 percent of blacks attain at least a high school education at the start of the twentieth century, increasing to roughly 95 and 85 percent respectively for cohorts born in the 1950s. Thus, it is clear from the trends that immigrants from Mexico arrive at a severe educational disadvantage.[15]

Despite the educational handicap of their first-generation predecessors, second-generation immigrants of Mexican descent show dramatic gains in educational attainment. Trends in Figure 2.6 reveal a twofold or greater increase in attainment among second generation Mexicans relative to their first generation ancestors. For high school completion, the improvement is particularly pronounced as cohorts born in the first half of the century enjoyed a rapid increase in attainment, climbing from near 30 percent in the early 1900s to over 75 percent by the 1950s. During this period, high

[15] Although high school completion rates narrow over the latter half the century, the college enrollment gap among new arrivals from Mexico expands beginning with the 1940s birth cohort to about the mid 1950s where the difference remains steady at 25 to 30 percent relative to the Hispanic majority (including their three-plus generation counterparts). As for the rate of college completion with a bachelor's degree and higher in Figure 2.6 Panel C, first-generation Mexicans are consistently the lowest at about 5 percent over the twentieth century with their second and three-plus ethnic counterparts just above with college completion rates increasing up to 15 percent among late century cohorts.

school completion rates among second generation Mexicans where almost three times greater than their first generation counterparts, a generational improvement exceeding that of all other Hispanic and non-Hispanic immigrant groups. The gains achieved by the second-generation, however, appear to come to a standstill by the third generation where estimated completion rates remain unchanged for third and higher generations. Relative to the native populations, high school attainment levels of long-term Mexican American residents follow a trajectory similar in magnitude to non-Hispanic blacks, albeit nearly 10 percentage points lower throughout the century. Though the trends do show a clear second-generation advantage, increased rates of intermarriage and dis-identification as Hispanic among the third and higher generation hinder an accurate estimate of the socioeconomic standing of long-term residents of Latin American descent (Alba and Islam 2009; Duncan and Trejo 2007; Edmonston, Lee and Passel 2003).

In contrast to the Mexican immigrant experience, other Hispanics of non-Mexican descent have more favorable rates of educational attainment. Because of the great diversity of geographic origins of Hispanic immigrants, however, generalizing the educational attainment of "other" Hispanics is difficult. Moreover, ethnic boundaries become blurred across generations as levels of intermarriage between immigrant groups increase over time; a pattern observed among all immigrant groups. Among Latino immigrants, for instance, recent estimates by Edmonston, Lee, and Passel (2003) indicate that only 8 percent of foreign-born Hispanics intermarry, compared to 32 percent of second-generation and 57 percent of third and higher generations.[16] As such, tracing generational trajectories among ethnic groups, particularly Hispanics and Asians, is more convoluted by the third-and-later-generation as ethnic identifies are blended through intermarriage (itself a form of assimilation).

Notwithstanding the heterogeneity of non-Mexican Hispanics, the second-generation advantage pattern is evident for other Hispanics in all three levels of

[16] Authors estimate intermarriage rates among Asians at 14%, 34%, and 54% for first, second, and third and higher generations respectively. Among ethnic whites and blacks on the other hand, intermarriage is projected much lower at 10%, 9%, and 8% for whites and 14%, 12%, and 10% for blacks across the first, second, three-plus generations.

attainment in Figure 2.6. Specifically, the second-generation has rates of attainment, not only above those of their generational and Mexican peers, but on par with and at times in excess of the baseline rates of the native white majority population throughout 20th century. Even when taking the conditional probability of Hispanics transitions between educational levels (see Appendix C, Figure C.7 and C.8) the second-generation edge among other Hispanics persists relative to native whites and Mexican and other Hispanic groups. For instance, trends in Figure C.7 show that over 50 percent of non-Mexican Hispanics born at turn-over-the-century who completed high school continued onto college with rates trending up to 70 percent for late century cohorts. In contrast, transition rates hover near 45 percent for first-generation Mexicans throughout the first half the century and then trend downward starting with 1955-1959 birth cohort where rates falling below 30 percent for those born in the 1980 and 1984 birth cohort. Thus, among the roughly 40 percent of foreign-born youth arriving from Mexico who finish high school around the year 2000, only 3 out 10 are likely to enroll in some type of postsecondary institution. While few in number once in college, graduation rates for first-generation Mexicans in Figure C.8 resemble those of their later generation countrymen and of native blacks and three-plus generation other Hispanics. Non-Mexican Hispanics of the second-generation, however, remain atop the Hispanic generational groups with conditional college graduation rates over 50 percent along with native whites and first-generation non-Mexican immigrants.

Despite the pervasive advantage of the second-generation among other non-Mexican Hispanics, the same dramatic upswing from the first to the second generation is not followed by a pronounced decline for third and higher generations among Mexican immigrants. Specifically, while second-generation immigrants of Mexican descent do show superior growth over their first-generation counterparts in their rates of high school completion, some college education, bachelor's degree receipt in Figure 2.6, the difference is muted between the second and third and higher generations. Upon closer observation, Mexican immigrants throughout the century appear to plateau by the second-generation and near the "average" minority attainment of native blacks with

very little regression by third and higher generations. In fact, most Hispanic generations (Mexican and non-Mexican) follow an attainment trajectory close to that of native blacks for all three levels of educational attainment. Only second-generation non-Mexican Hispanics follow the upper tier trajectory of native whites in each panel of Figure 2.6, however, they too as an ethnic group regress back to the black minority by third and later generations. On the other hand, first-generation immigrants from Mexico, who are at a tremendous educational disadvantage relative to all other ethnic groups, follow an upward trajectory to the level of native blacks.

Overall, trends in Figure 2.6 show that Hispanics assimilate to the native minority population despite the observations of a second-generation advantage pattern among other non-Mexican Hispanics and to a lesser degree, Mexican immigrants. National origin groups from Europe and Asia, in contrast, have attainment trajectories in-line with or often above those of native whites. Such ethnically divergent patterns of incorporation lend support for the segmented assimilation theory that national origin groups are differentially absorbed into American society based on human capital and receptivity of the native population (Portes and Zhou 1993). While immigrants from Mexico arrive at a significant human capital disadvantage as indicated by the educational attainment of the first generation, it would be inaccurate to conclude that Mexicans or Hispanics more generally, are unsuccessfully incorporated in the socioeconomic fabric of American society. In fact, the pattern of generational trends show that second-generation Mexicans have made substantial strides in educational attainment relative to their first-generation counterparts and other national origins groups. Moreover, Smith (2003, 2006) found that the rate of educational assimilation among Latin American and Mexican immigrants is even more pronounced and in-line with past immigrant groups when generational comparisons are made between fathers and sons (i.e., lagging cohorts by 25 years) rather than evaluating generational differences of the same age and year. Although the generational alignment proposed by

Smith is not possible in the currently analysis[17], tracing the educational trajectories of national origins groups over the course of the 20th century provides a broad outlook for how generational paths have changed over time and paved the way for future generations.

Discussion

A principal question guiding this dissertation project and one that is fundamental to the study of immigration is *how well are immigrants, particularly contemporary newcomers from Asia and Latin America, assimilating into the American mainstream and what factors account for their pattern of incorporation*? To answer this question, it was first necessary to establish (empirically) immigrant patterns of educational assimilation, which are characterized in the literature as following one of several potential pathways (upward, second-generation advantage, or segmented by national origins). While patterns have been observed periodically for both early twentieth century immigrants from Europe and contemporary immigrants from Asia and Latin America, evaluations are typically achieved using data collected for a single age group (and thus episodic) or too small in sample size to capture generational differences within national origin groups. Thus, previous attempts to gauge generational patterns of educational attainment offer narrow and often sporadic glimpses into the immigrant assimilation experience for which generational trajectories are difficult to discern.

Using pooled data from the 1996-2009 March supplement of the IPUMS Current Populations Survey to overcome the limitations of prior studies, the investigation in this chapter offered a more complete depiction of educational attainment among immigrant and native-born adults by national origins and birth

[17] To align cohorts in the pooled IPUMS-CPS data using a 25 year lagged between generations, a comparison could only be made between the 1930-1934 cohort (1st generation grandparent), 1955-1959 cohort (2nd generation parent), and 1980-1984 cohort (3rd generation child). Because of small subsample sizes by national origin group and generation, the alignment of individual birth years (rather than cohorts) is not possible under the current study design.

cohorts over the twentieth century. An evaluation of these generational trends sought to answer two questions. First, how does the educational career path between immigrant and native populations change over time and across generations? Second, how do educational trajectories reflect patterns predicted by popular theories of immigrant assimilation? A thorough examination of the attainment trends uncovered in this chapter reveals several interesting findings, and offers important insight to understanding the incorporation of contemporary immigrants relative to earlier waves arriving at the turn of the century.

Trends observed in this chapter highlight the increased significance of a college education in the lives of each successive birth cohort. Consistent with the rapid expansion of postsecondary education, the rates of any college enrollment increased among immigrants and native populations and then leveled off for those born after the 1945-1949 cohort. Evident for nearly all groups (ethnic and generational), this pattern of college enrollment follows the S-shaped trajectory characteristic of the spread of cultural change (Pemberton 1936; Rogers 1983). For completing at least a high school education, however, most groups reached "saturation", or the point at which the majority of a group attains a certain level of education, for much of the century. For groups educationally disadvantaged in some way, either through historical discrimination (e.g., black Americans) and/or arriving to the U.S. with limited human and economic capital (e.g., first-generation immigrants), attainment levels of at least a high school education approach saturation by the middle of the century. For immigrants arriving from Mexico, who are arguably the most resource disadvantage among new newcomers throughout the century, completion of at least high school education is well below other groups (15 percent for those born at the start of the century), reaching 40 percent for those born in the early 1980s. At the level of bachelor's degree completion or higher, trends remain relatively flat across birth cohorts for most ethnic and generational status groups as acclimation to the college environment is slow for all but the most advantaged groups (i.e., late century first and second generation immigrants from Europe and Asia).

Results also show that disparities among national origin and generational status groups are consistent across the three successive levels of educational attainment. Consistent with past research, the expansion of educational opportunities to include higher levels of schooling is seldom accompanied by a reduction in educational disparities between the elite and underprivileged (Shavit and Blossfeld 1993). Defined by Raftery and Hout (1993) as Maximally Maintained Inequality, they argue that growth of the educational system enables disadvantaged groups to access opportunities only after elite groups have achieved even greater levels of schooling—an exchange that only lessens relative class inequalities as quantitative differences remain unchanged. At levels of education where attendance has become universal (saturated) over time or less restrictive in the case of higher education, qualitative differences in the type of curriculum as well as the prestige of institutions arguably supplant quantitative differences (Lucas 2001). Results captured in this analysis using CPS data offers further evidence of these persistent differences over the course of the twentieth century. Moreover, trends among immigrant groups suggest that the relative success of ethnic groups upon arrival (i.e., the selectivity of first generation immigrants) are tied to their capacities for social mobility as embodied by their national origins. Disparities in the status position of newcomers empowers some to more easily adapt (e.g., European and Asian immigrants), while those who arrive in a lesser position find socioeconomic progress more difficult (e.g., Hispanic immigrants). It is also evident from the pattern of results that newcomers at the top of the education ladder are in a better position to achieve sustained success and able to pass on their advantage to their later generations and future immigrants. Thus, as the tide of educational expansion has risen over the course of the century, all groups have experienced an increase in levels of educational attainment. Yet not all groups start at the same level nor are they all able to equally capitalize on new educational opportunities.

In addition to describing how patterns of educational incorporation vary over the twentieth century for different national origin groups, this chapter also set out to document how these trends correspond or depart from hypothesized patterns of

immigrant assimilation. In sum, immigrant trends in educational attainment are consistent with assimilation patterns predicted by the second-generation immigrant advantage and segmented assimilation hypotheses. Evidence of a second-generation advantage is consistent with patterns observed among Latin American immigrants and, to a lesser extent, Asian immigrants. Specifically, both Mexican and non-Mexican Hispanics display clear and consistent evidence of the second-generation edge pattern throughout the century and for each measured level of educational attainment. The second-generation boost pattern of incorporation observed for contemporary Asian and Hispanic immigrants follow the same curvilinear assimilation trajectory as turn-of-the-century immigrants from South, Central, and Eastern (SCE) Europe. For Mexicans in particular, the second-generation quickly overcomes the depressed course charted by their first-generation peers. Thus, immigrants from Mexico, although greatly disadvantage upon their arrival to the U.S., follow the same pattern of incorporation as other national origin groups and appear to be rapidly ascending to educational levels of more advantaged national origin groups.

Along side evidence of a second-generation advantage mode of assimilation, the observed trends also reveal patterns consistent with segmented assimilation. Specifically, results show that immigrants from Asia and Europe assimilation to educational levels equal to or above that of the native white population. For Mexican and non-Mexican immigrants, the trajectory of assimilation is decidedly toward the lesser attainment rates of native blacks. While results of this chapter do not account for these divergent paths, the upward trajectory of immigrants from Europe and Asia, who are often described as having greater capacities for social mobility than immigrants from the Latin America and the Caribbean who have more humble social origins, is consistent with the segmented theory. In fact, trends show throughout the century that first-generation newcomers from Europe and Asia arrive with education attainment rates already in excess of native blacks and often at parity with native whites for all three measured levels of education. For immigrants of Mexican heritage, on the other hand, rates of educational attainment begin excessively below all other ethnic and

generational status groups, but reach parity with native black by the second generation and remain steady for later generation. Whereas Mexican immigrants' trajectory is upward, other non-Mexican Hispanic immigrants appear to follow a downward path as members of the second-generation consistently have educational rates at or above those of native whites yet third and higher generations have rates resembling those of the native black population. Although the ethnic identity of three-plus generations becomes less distinct as inter-ethnic marriage increases, such inter- and intra-ethnic trends are consistent with those described by segmented assimilation approach. Thus, results of this analysis suggest that the second-generation edge pattern occurs within a segmented-assimilation framework.

While this chapter has uncovered patterns of assimilation consistent with a second-generation advantage and segmented-assimilation, the mechanisms that underlie each of these perspectives vary greatly. The next chapter seeks to resolve these differences by reconciling the conventional assimilation theory, second-advantage pattern under the optimism hypothesis, and segmented assimilation theory within a status attainment framework. Once establishing common theoretical ground among these popular theories of assimilation, Chapters 4 and 5 empirically test the key casual mechanisms argued by each theory within the framework set forth by the reconciled model of immigrant assimilation. The goal is not to identify a single best theory, but to evaluate how the key relationships that underscore each perspective work together to explain distinctiveness in the immigrant experience.

Chapter III: Theorizing the Immigrant Experience within a Reconciled Model of Generational Assimilation

This project examines how immigrants' generational status influences postsecondary trajectories by integrating several existing perspectives that relate nativity to educational achievement within a status attainment framework. The main theoretical perspectives I will bring to bear on this investigation are the traditional assimilation theory, immigrant optimism hypothesis, and segmented assimilation theory. While each of these perspectives identifies a distinct relationship between immigrant adaptation and educational achievement, the status attainment model offers a framework for integrating these hypotheses into a series of interrelated casual propositions of socioeconomic mobility. I begin by discussing the status attainment model popularized by Blau and Duncan and later revised by a group of researchers at the University of Wisconsin. Next, I discuss how the status attainment and immigrant assimilation literatures intersect. Finally, I address how each theory fits within the status attainment model, differentiating between individual- and contextual-level influences, and the testable hypotheses each generates.

Status Attainment Model

What determines a person's socioeconomic position in society? It is a question, a perennial one in the field of sociology, that stratification theorists have attempted to unravel for over half a century (Ganzeboom, Treiman and Ultee 1991). The most influential work on this problem is Blau and Duncan's *The American Occupational Structure*, and best known as the status attainment model. Departing from previous research utilizing mainly descriptive analyses of mobility, Blau and Duncan (1967) proposed a causal model identifying those attributes that facilitate the social mobility of individuals. Their basic model, diagramed in Figure 3.1, uses social origins or family's socioeconomic background to explain a person's educational attainment from which

both factors then explain occupational attainment. Family background, as measured by father's education and occupation, has a largely indirect effect on labor market outcomes via educational level. Education plays a prominent role in the status attainment process as it both mediates parental position and independently affects occupational outcomes.

A key contribution of the Blau and Duncan model is that it captures part of the social process of status attainment. That is, the model reconceptualizes social mobility as a system of causal sequences through which status attainment takes place. This formulation is important for two reasons. First, background variables are specified as jointly interdependent rather than a set of singular effects. For instance, the direct effect of educational attainment is in fact due to the dependence of education on social origins. In this way, it is the system of direct and indirect effects that is important rather than the unique effect of a specific variable. Second, devising social mobility as a path dependent process acknowledges that the past casts a shadow on the present. Social mobility implies a chronological ordering of events, however, the status attainment model was the first to detail, both conceptually and empirically, the successive steps over the life span.

The basic Blau and Duncan model stimulated a number of ancillary research questions regarding social mobility and inequality. Several researchers sought to broaden the model by detailing the finer mechanisms and mediating factors that underlie the achievement process. One of the first to take up this effort was Duncan, Featherman, and Duncan (1972) who introduced cognitive and motivational links between family background and educational achievement. Their primary interest was to understand what about social origins creates favorable or unfavorable circumstances for achievement and how do these circumstances exert their influence. Considerable attention is also given to the influence of other factors such as age, race/ethnicity, national origin, and career contingencies such as marital status and child bearing on status attainment.

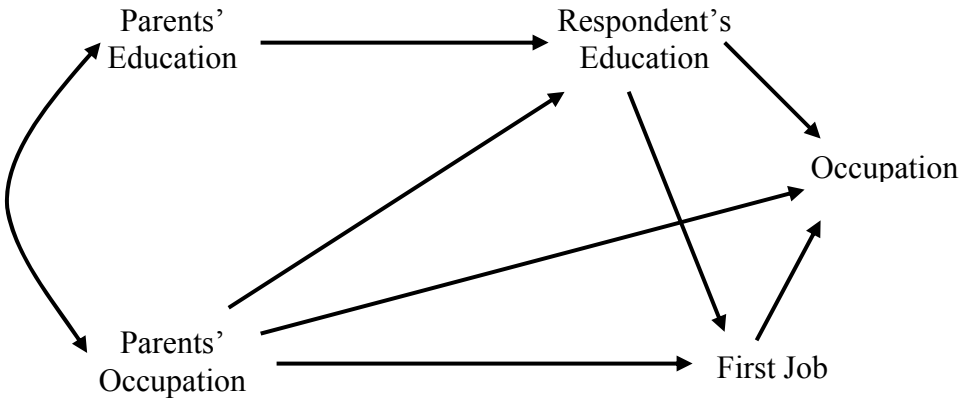


Figure 3.1. Blau and Duncan's (1967) Status Attainment Model

Yet, the development of the status attainment model continued to advance at a social psychological level. The main thrust would come from a group of researchers affiliated with the University of Wisconsin (Sewell, Haller and Ohlendorf 1970; Sewell, Haller and Portes 1969). Working from Blau and Duncan's basic structure of status transmission, they explicitly identified a series of interpersonal influences linking parental status to educational attainment. Under this respecified model, shown in Figure 3.2, family background effects on educational attainment is mediated by the influence of significant others. That is, family's socioeconomic background places limits on an individual's pool of potential significant others and the nature of his or her social interactions. For example, parental status is likely to have a strong influence on the social class and background of one's peers. In the Wisconsin model, the influence of significant others refers to the educational encouragement (direct or indirect) from parents, teachers, and peers from which status aspirations, educational and occupational, are formed and in turn act directly on educational attainment. Respondents' mental ability and academic performance are also featured prominently in the model, affecting the formation of status aspirations and probable collection of significant others.

These initial theoretical models and subsequent renditions are commonly and collectively known as the status attainment perspective. At its broadest, the attainment perspective seeks to explain an individual's class position in society and more

specifically how people attain their statuses. The core components of the status attainment framework—parental status and educational and occupational attainment—follow a common causal arrangement where labor market outcomes are defined as a function of prior education as the latter is viewed as causally dependent on the parental status. Empirical results regarding the structural orientation of the status attainment tradition are remarkably durable with similar levels of association found across different times, locations, and forms of data collection (Haller and Portes 1973). In fact, the prominent position of the status attainment model in contemporary social stratification literature is due in large part to the robust relationship between the core status variables. With widespread, often implicit, adoption of the status attainment model as the standard paradigm of social mobility, scholarly attention has primarily been devoted to clarifying the micro-processes linking status outcomes.

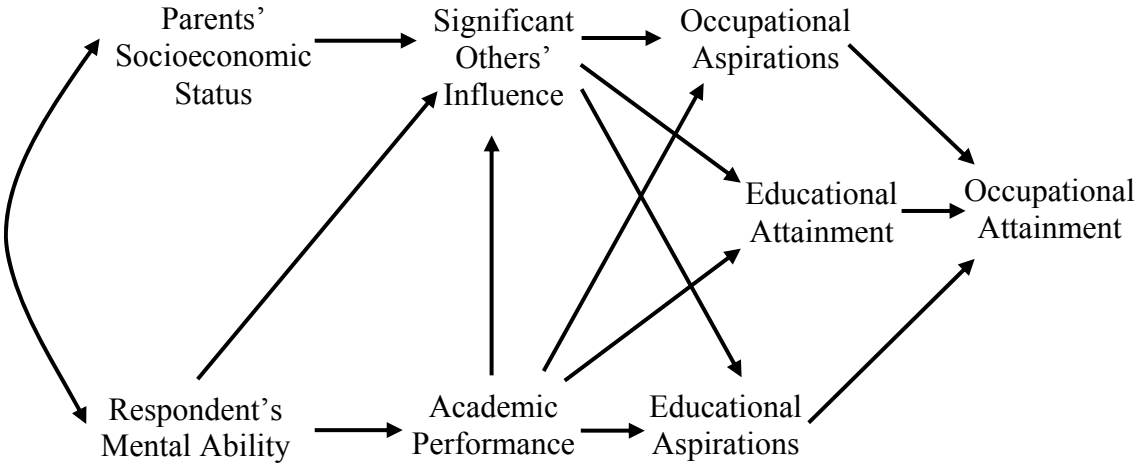


Figure 3.2. Wisconsin Model of Status Attainment

More recent elaborations to the framework, however, have incorporated contextual-level variables to offset its individualistic bias (Breiger 1995). Conceptualizing socioeconomic outcomes as the result of individual-level processes, constrained only by family circumstances, the basic status attainment model implicitly assumes an open and homogenous opportunity structure. Critics argue this assumption represents an oversimplification of reality and the status attainment process (Baron and

Bielby 1980; Burawoy 1977), often pointing to the failure of the model to adequately explain differences in attainment by race and gender (Parcel 1979; Porter 1974; Sewell, Hauser and Wolf 1980). The introduction of structural constraints that influence the process by which a person attains a certain position in society is thought to produce a fuller, more complete account of the status attainment process and outcomes. While few disagree with the call for both individual- and contextual-level factors, it is only within the last 20 years that data matching individuals to their structural environment over the life cycle have become widely available. Data on educational attainment remains the richest source of information due to the recency of these data collection efforts and since schooling activities occur within hierarchical groups—learning groups within classrooms, classrooms within schools, schools within districts, and schools within communities.

The influence of the status attainment model on the study of social stratification is pervasive. Although none of the components of the attainment perspective is unique to the stratification literature, the basic model serves as an organizing framework that has dominated professional thinking about social mobility. Its influence, however, is often obscured by the separation of the system into its two attainment processes, whereby contemporary research tends to focus either on educational or occupational outcomes with only a cursory mention of their transactional relationship. In either form, researchers have sought to extend the status attainment perspective to subgroups of the population not well represented in the original Blau-Duncan and Wisconsin models. Except for Blau and Ducan's (1967) examination of white-black differences in occupational attainment, early studies estimated the status attainment model using data from predominately white, male populations. Contemporary extensions of the model, with access to representative data, explore how the attainment processes differs for females and various racial and ethnic groups (e.g., Tienda 1982). Yet, in what Abbott (1988) referred to as jurisdictional claims to knowledge, these subgroup extensions are seldom identified as mobility studies per se, but as contributions to their specific fields of study.

Immigrant Assimilation and Status Attainment

The theoretical underpinnings that bring us from the status attainment perspective to theories of immigrant assimilation are slight, although often understated in the literature. Early pioneers of the status attainment perspective recognized that socially ascribed characteristics—status assigned by virtue of membership in a particular group—in addition to economically ascribed family background factors may impede (or facilitate) opportunities for social mobility (Blau and Duncan 1967; Duncan and Duncan 1968; Duncan, Featherman and Duncan 1972). While data limitations at the time prevented an in-depth analysis of these additional background factors, scholarly attention was primarily given to investigating 'ethnic' variations in achievement. The term ethnic in these studies is applied in a rather generic manner, encompassing subgroup differences based on race (white versus black), national origin, ancestral heritage, and generational status (parentage). Investigations sought to determine whether ethnic minorities differed with regard to the rapidity of assimilation into the mainstream socioeconomic system and in the rate of upward mobility from generation to generation. Conceptualized as both a predetermined and preceding variable, ethnic group membership is incorporated into the attainment model as a background factor in addition to social origins. Modified in this way, observable differences in achievement among ethnic minorities that persist after allowing for variations in socioeconomic background, educational attainment, and other intervening factors suggest the stratification process differs in some respect for a subgroup.

Much of the research in the late 1960's and 1970's found considerable evidence that race, or more specifically being nonwhite, had independent disadvantageous consequences for several factors that determine an individual's current status above and beyond his (or her) poorer social origins (Duncan 1968; Duncan 1969; Featherman and Hauser 1978). For instance, Blau and Duncan's (1967) original assessment found that nonwhite men, consisting predominately of African Americans, faced severe and cumulative handicaps at every stage of the life cycle compared to their native white

counterparts net of social origins and prior achievements. In other words, even if nonwhites had the same family background, the same education, and the same initial occupation as whites, their chances for upward mobility were still less than whites. They go on to show that racial differences in achievement varied by region (North versus South), age, and educational level whereby disparities were larger in the South, at older ages, and among the more educated. Largely in response to this latter finding, Blau and Duncan concluded that the difficulty black Americans have in converting any advantage during the lifespan into occupational achievement and monetary returns is the result of racial discrimination. While data limitations left the status attainment framework unable to detail the finer mechanistic handicaps and exclusionary practices in the educational system and labor market which lie at the center of any analysis of racial discrimination, the model provided a way of quantifying racial and other subgroup differences in the stratification process.

In sharp contrast to the disparities in vertical mobility found between whites and nonwhites, Blau and Duncan's original analysis and subsequent studies in the 1960s and 1970s uncovered only minor differences in achievement among immigrant groups, the bulk of whom were white and arrived from Europe. Specifically, white immigrants who arrived at the turn of the twentieth century, on average, differed little in terms of educational and occupational achievement from northern-born whites of native parentage once social origins were taken into account (Blau and Duncan 1967; Duncan and Duncan 1968; Featherman and Hauser 1978). Differences among white native and immigrant groups regarding achieved status were found, however, across generational status and national origin. That is, foreign-born arrivals (first generation immigrants) were found to have lower socioeconomic status than that of native whites while second generation immigrants (native-born to foreign-born parents) from northern or western European descent—approximate to the Anglo-Saxon Protestants who first settled in the United States—were equal to or exceeded the achievement of native whites (Blau and Duncan 1967). The economic position of other second-generation immigrants of southern and eastern European descent and non-European countries was slightly weaker

compared to their second-generation counterparts from northern and western Europe and native whites, but superior to first generation immigrants. Standardizing for the major background variables reveals the inferior position of first generation immigrants was almost entirely due to their lesser educational attainment. Conversely, these controls for the less advantageous background of the second generation accentuate the superior socioeconomic achievement of immigrants of northwestern European descent while those of other, "newer" descent (mostly from southeastern Europe) realized the greatest improvements in educational attainment.

Overall, white ethnic minorities, relative to black Americans, have fared as well as and in some cases better than the white majority. This does not mean that the absorption of white immigrants and their descendants into the United States economy was unimpeded. The higher rate of occupational success of the second generation of northern or western European descent compared to children of immigrants of other national origins who tended to overachieve in the educational system suggests some labor market discrimination toward descendants of more recent and less prestigious nationalities, such as Italians and Poles (Duncan and Duncan 1968). Yet nearly all second generation immigrants across a variety of national origins achieved, net of social origins, educational success in line with the American average with the majority converting their educational achievements into occupational success. Even first generation immigrants, who tend to lag behind in educational attainment, achieved occupational levels comparable to native whites once they overcame their educational handicap (Blau and Duncan 1967). Given the overall success of white ethnic minorities, the existence of pervasive discrimination solely based on ethnic origins seems unlikely. In fact, the better-than-average socioeconomic achievements of the second generation above and beyond the consequences of national ancestry, social origins (father's education and occupation), or schooling, suggests some other unanalyzed factor associated with being a second-generation American is at work.

Before addressing this unexplained advantage of the second generation, it is important to point out that not all national origin groups were seamlessly absorbed into

the economy by at least the second generation. For instance, nonwhite immigrants from Latin America, often denoted in the literature as 'America except Canada' or of 'Mexican origin', failed to achieve educational or occupational parity with the native white population after standardizing for social background (Duncan and Duncan 1968). Moreover, the disadvantaged position of new arrivals from the Americas and their offspring in the socioeconomic hierarchy and their inability to make educational or occupational progress bears a striking resemblance to the pattern of successive handicaps observed for southern-born black Americans, albeit of a lesser magnitude (Duncan and Duncan 1968; Featherman and Hauser 1978). While a large fraction of this socioeconomic disadvantage for blacks and those of Latin American heritage is attributed to social background and schooling, the net disparities suggest these ethnic groups were unfavorably received by the main institutions of American society. Yet Hispanic immigrants are a unique case in that handicaps for socioeconomic integration had not substantially lessened between 1960 and 1970 as observed for blacks nor had other nonwhite immigrant groups, such as those from Japan and China, faced the same comparative disadvantages throughout the life cycle. Firm conclusion regarding the assimilation of "new" immigrant groups during this era, however, remained limited as a result of too few observations in several national origin strata—especially for Latin American countries, often collapsing groups into "other" Latin America, "other" Asia, or nonwhite other than blacks.

Despite these apparent caveats, membership in a particular national origin group can constitute a relative handicap or bonus in the stratification process. Several explanations for the unequal achievement among immigrant groups have been put forth in the 1960s and 1970s. One explanation is that length of tenure and experience in the United States affects the ease with which new arrivals are able to achieve economic integration. Stated differently, those with a longer tradition of immigration are able to provide a more supportive and facilitative context for the socioeconomic assimilation of more recent immigrants of the same national origin. Lending support for this hypothesis is the ample evidence that immigrants from "old" ethnic stocks, particularly

from England, Wales, and Scotland, enjoy a high level of socioeconomic success while new arrivals from less established lines of immigration realize moderate ("newer" immigrants from southern, central, and eastern Europe) to below average levels of achievement (newest arrivals from Latin America). Similarly, experience in the host society or generational status also has consequences for one's place in the economy whereby each successive generation is expected to perform better than the first until resembling the native population. This general theory of immigrant assimilation, in which the passage of time and the succession of generations lead to increasing economic, cultural, political, and residential integration into American society, is commonly referred to as "straight-line assimilation."

A second explanation for the variations in achievement is that national groups are differentially acceptable to the native population. A long history of racial tensions in the United States and the threat mass immigration poses to the economic opportunities of native workers and their way of life (Bonacich 1972) would suggest the systematic exclusion of certain nonwhite groups and downward mobility. The segregation of groups in the housing and labor markets, differential wages for similar work, and other disparities net of human capital resources are manifestations of this differential preference or racial/ethnic discrimination.

Finally, differences in achieved status among ancestral and national origin groups may be the result of certain qualities or resources immigrants possess. In addition to monetary and other economic assets, these resources include less tangible characteristics of competence and ambition that define the social origins of their members (see, for example, Rosen's (1956, 1959) concept of achievement syndrome). In this way, the limited achievements of new arrivals may be largely the result of economic and other human capital handicaps that overshadow cultural assets associated with worldly success such as ambition and hard work. For the second-generation, however, barriers to success such as not speaking English are diminished and cultural attitudes of upward mobility passed along from their parents, surface as a modest advantage in socioeconomic status relative to third- and higher-generations. By the

third-generation, the valuations that characterize the national origin group are thought to give way to American ideals with achievement levels resembling that of the general population.

While these general theories of ethnic assimilation generated a number of research questions, the availability of adequate data with which to test these various accounts was absent—an issue scholars during this era frequently mention (e.g., Duncan, Featherman and Duncan 1972; Featherman and Hauser 1978). In addition to data limitations, the primacy of race as an important determinant for social mobility coupled with slight variations in achievement among mostly white immigrants who largely achieved high levels of success arguably reduced academic interest in ethnic differences based on national origin and heritage. In fact, the one account that could be empirically evaluated reliably, the straight-line assimilation theory, would dominate conventional thought regarding immigrant assimilation for much of the twentieth century. It would not be until the early 1980's when Stanley Lieberson, in his seminal work *A Piece of the Pie: Blacks and White Immigrants Since 1880*, examined the issue of why new-European and other non-white groups achieved relative success while blacks continued to struggle, that scholars renewed the debate over the pertinent conditions for absorption into American society. Interest in the assimilation of immigration intensified throughout the 1990s with growing concern over the fate of "new" immigrants from Latin America and Asia, who had been arriving in large numbers since 1965.

Theories of Immigrant Assimilation

The first widely accepted theory of immigrant integration is the straight-line assimilation theory or "assimilation theory" for short. Assimilation theory predicts that the descendants of immigrants will come to resemble the general population within and across generations, whereby old cultural and behavioral patterns are shed in favor of

new ones and that, over time, ethnic groups become virtually indistinguishable from natives. Classical assimilationists, such as Park and Burgess (1969 [1921]), view the integration of immigrants into American society as a natural, inevitable process that develops along a relatively stable pattern of cycles that includes a set of four stages: contact, competition, accommodation, and assimilation. Park and Burgess (1969) famously defined assimilation as "a process of interpenetration and fusion in which persons and groups acquire the memories, sentiments, and attitudes of other persons or groups, and, by sharing their experiences and history, are incorporated with them in a common cultural life" (p. 735). Underlying this perceptive are the assumptions that the assimilation process is universal and upward, affecting immigrants and racial minorities alike, and that once set in motion, integration is inevitable and irreversible, although in the short-run the process could last for a long time (Park 1928; Park 1950).

As assimilation theory evolved, emphasis placed on the inevitability of adaptation to the mainstream began to wane (Glazer 1971; Glazer and Moynihan 1963) while interest in the multidimensional character and pace of assimilation would swell. Central to this conceptual shift was Gordon's (1964) recognition that assimilation was not a single event, but occurs along a series of dimensions or subprocesses through which ethnic minorities must pass before achieving 'full' assimilation. However, Gordon argued that transitions from one dimension of assimilation to the next are not automatic and that groups could remain at one stage or another indefinitely. For instance, learning the national language and familiarity with local customs (cultural assimilation—the first of Gordon's seven stages) does not necessarily lead to the social acceptability of large-scale intermarriage between members of an ethnic minority group and the native population (marital assimilation—third stage). In this manner, an ethnic group may become culturally similar to the "core society" or "core subsociety", but retains its ethnic distinctiveness. Although ambiguous about how groups proceed from one stage to the next, Gordon observed that cultural assimilation occurs rather quickly, while structural assimilation (the second stage)—entrance into the social networks and institutions of the host society on a primary level—does not. Given the difficulty of

achieving structural assimilation, the catalyst from which all other forms of assimilation occur, the picture of America was recast as a structurally pluralistic society made up of structurally separate nationality and quasi-racial groups (Gordon 1964, pg. 159).

While not a direct offshoot of the assimilationist perspective, the status attainment tradition—defined by the works of Blau and Duncan (1967) and Duncan and Duncan (1968)—greatly influenced the direction of the assimilation model. First, the status attainment framework provided a basic model of the causal processes that facilitate the social and economic movement of individuals across and within generations. In this way, assimilation or the adoption of an American identity over generations became synonymous with socioeconomic success and those outcomes that bring about success (e.g., postsecondary enrollment). Second, status attainment researchers argued that certain institutions play a vital role in achieving assimilation, namely the family unit and education (schooling). For instance, Blau and Duncan (1967) show that the disadvantaged position of first-generation immigrants is almost entirely accounted for by their lesser family background and educational attainment—suggesting other components of assimilation play a lesser role in the assimilation process. Last and perhaps most important, early status attainment research generally supports the conventional assimilation model, finding small ethnic or generational differences in educational attainment and occupational status except in the case of African Americans. This affirmation of the assimilation theory prompted many to adopt the basic tenets of the status attainment model as a more refined approach to evaluating the assimilation process.

Taken together, traditional assimilation theory suggests the following hypothesis: Ethnic background will diminish as an important determinant of socioeconomic success across generations with much of the difference attributed to their lesser resources and prior achievements. The theory is vague about how many generations must pass before ethnic groups become indistinguishable from the native population, although the third generation is typically the benchmark. Thus, first-

generation immigrants would be expected to achieve the least success and third- and higher-generations the greatest level of achievement.

The coalescence of the status attainment model and assimilation theory encouraged a flurry of writing from the 1960s through the 1980s with evidence both against and in support of the assimilationist view. For example, Glazer and Moynihan (1963) argued that early-twentieth-century immigrants did not completely "melt" into the American mainstream and instead continued to behave in identifiably "ethnic" ways. Gordon (1964) referred to the vision of America as a "single melting pot" as an illusion, "a generous one, in one sense, since it held out the promise of a kind of psychological equality…but one which exhibited a considerable degree of sociological naïveté" (p. 129). There is considerable evidence, however, that the descendants of immigrants from southern and eastern Europe had largely been absorbed into the social fabric of American society (Alba and Golden 1986; Lieberson 1985; Lieberson and Waters 1988) and achieved economic incorporation fifty or more years after their ancestors arrived (Featherman and Hauser 1978; Hirschman 1983; Jacobs and Greene 1994; Lieberson 1980; Neidert and Farley 1985). These divergent conclusions are less about observed trends than how 'assimilation' is operationalized. In summarizing whether assimilation occurred in the United States as described by the conventional view, Neidert and Farley (1985) conclude:

> If assimilation means that third-generation ethnic groups will be indistinguishable from the core English group with regard to education, occupation or per capita income, the answer is definitely not. Even when the analysis is restricted to European-origin groups, we find significant differences on these indicators of status. On the other hand, if assimilation means that ethnic groups are neither favored or at a disadvantage in the process of occupational achievement, then there is strong evidence to support the [assimilation] theory (p. 849).

Recall that the central element for Blau and Duncan (1967) concerning the incorporation of minority groups is whether ethnic status had independent disadvantageous consequences for an individual's current status accounting for social origins. In this way, the status attainment translation of assimilation theory places

greater emphasis on the marked reduction of ethnic differences over time than becoming indistinguishable from the native population.

Despite general support for assimilation theory, the inability of the theory to adequately explain a variety of anomalies, such as the consistently poor position of African Americans and newly arriving nonwhite immigrants from the Americas or the dramatic upswing among second-generation whites of European descent, served to undercut its utility as theoretical explanation. Moreover, as conventional assimilation theory became imbued with the status attainment tradition, it inherited many of the criticisms leveled against Blau and Duncan's basic model. Examples of this include the lack of a model of the finer causal processes that underlie the status attainment process (Duncan, Featherman and Duncan 1972) and an overemphasis on the individual to the neglect of context-level factors that shape the assimilation process (Breiger 1995). As knowledge of immigrants' incorporation improved in the 1990s, signaled by the release of several data sources detailing the experiences of the mostly nonwhite post-1965 wave of immigrants from Latin America and Asia, a series of modifications to the traditional assimilation model emerged. These refined models address many of the shortcomings of the conventional version, a progression that the architects of the status attainment model both anticipated and welcomed (Duncan 1969, pg. 89).

Two revisions that have received the greatest scholarly attention are the immigrant optimism hypothesis and segmented assimilation theory. The immigrant optimism hypothesis addresses and explains the modest advantage (higher socioeconomic achievement) observed among second-generation immigrants relative to their first-generation and third- and higher-generation counterparts. The theory posits that immigrant children assume their parents' favorable attitudes and determination for upward mobility (e.g., parents high valuation of education), which in turn leads them to behave in ways that promote educational achievement and early occupational success. Second-generation immigrants, however, are better able to capitalize on the ambitions inherited from their parents because of their greater English proficiency and less cultural distinctiveness (Kao and Tienda 1995; Landale, Oropesa and Llanes 1998). By

the third generation, optimism and aspirations for upward mobility weaken as native-born parents become less idealistic—perhaps tapering aspirations for their children due to their long-term experience with institutional barriers and for minority groups, discrimination (see Ogbu 1989). Consequently, third-generation children achieve socioeconomic successes more closely resembling that of the general population.

The influence of the status attainment perspective on the immigrant optimism hypothesis is striking, even if never explicitly addressed in the literature. For instance, the emphasis of the optimism hypothesis on parents' aspirations as an essential factor for explaining differences in achievement parallels the Wisconsin version of the status attainment model emphasizing the influence of significant others (i.e., encouragement of parents, teachers, and peers). Moreover, the causal ordering of variables is virtually identical as both detail the social psychological mechanisms of the attainment processes whereby parents' attitudes for upward mobility influence their child's levels of aspiration (educational and occupational) which then directly affects educational attainment. In the optimism model, however, parents' attitudes for upward mobility are informed by their status as an immigrant (national origin) whereas in the Wisconsin model parental aspirations are largely a function of their occupational and educational attainment (social origins). Another consideration raised by the immigrant optimism hypothesis is the importance of language acquisition for socioeconomic achievement—reminiscent of Gordon's (1964) statement on the multidimensional character of assimilation. Yet, setting the core components of the optimism hypothesis within a status attainment framework offers a fuller picture of the causal processes that shape immigrants' incorporation by taking into account additional factors relevant for socioeconomic adaptation, such as the influence of teachers and peers and respondent's mental ability and academic performance (i.e., lessens potential omitted variable bias).

On balance, the immigrant optimism hypothesis predicts that native-born children of immigrants (second generation) will achieve greater levels of success (educational attainment) relative to first-generation and third- and higher-generation youth and that this "advantage" arises from inherited attitudes from their parents'

favoring upward mobility and the acquisition of the English language. Under these conditions, this theory also suggests that the lesser achievement of first-generation youth should be attributed in large part to their limited English proficiency. By the third-generation, however, the sociocultural advantages that characterize a national origin group disappear, perhaps by parents' limited aspirations for their children, and achievement lessens to resemble the general population. To date, there is moderate support for the immigrant optimism hypothesis with the strongest evidence among Asians regarding their educational progress (Kao and Tienda 1995) while the process of adaptation among Hispanics is less definitive (Landale, Oropesa and Llanes 1998).

In contrast to the two previous theories, segmented assimilation theory emphasizes that new immigrants and their children may follow different paths of incorporation into American society and that assimilation into the white middle class is just one of several pathways (Portes and Zhou 1993; Zhou 1997). The theory argues that since the United States is a stratified and unequal society (the extent of which has varied over time), new arrivals and their descendants may assimilate into different 'segments' of society. Portes and Zhou (1993) propose three potential pathways: conventional upward or straight-line assimilation, downward assimilation, and selective or limited assimilation.

According to the segmented assimilation perspective, immigrant groups with high levels of human capital (higher socioeconomic status) and greeted favorably by society are likely to follow the classic pathway of upward socioeconomic mobility and integration. Alternatively, groups that possess few resources and have minimal community support are unlikely to secure the stable employment necessary for upward mobility and thus remain more susceptible to long-term poverty for themselves and their children. In fact, immigrant parents' poor economic prospects may force them to settle in poverty-stricken, inner-city neighborhoods where their children must attend poorly performing and underfunded schools—effectively exposing their children to an "adversarial culture" that discourages valuation of education and aspirations for social mobility (Suarez-Orozco and Suarez-Orozco 1995, pg. 60). In the third pathway of

selective assimilation, parents seek to promote their children's upward mobility but limit their acculturation to American society by actively preserving traditional cultural values. In this way, maintaining the culture of origin has a protective effect for immigrant children, particularly in disadvantaged neighborhood where assimilating too fully into the social environment may reduce chances for upward mobility. Generally, these different trajectories result from variations in the resources groups can draw on at the time of arrival (or for the children of immigrants, their parents' socioeconomic status), family structure, and the context of reception—contingent on geographic location of settlement, "race" or color, national origin, and opportunity structure for mobility (Portes and Rumbaut 2001; Portes and Rumbaut 2006).

The segmented assimilation theory offers a comprehensive perspective for understanding the complexities and discrepancies that plague the immigrant assimilation literature, encompassing many of the interrelated components relevant to the experience and outcomes of contemporary immigrants and their children. Evidence in support of the segmented assimilation interpretation largely comes from case studies of different immigrant groups whose adaptation to American society tend to follow one of the three pathways (Portes and Rumbaut 2001; Portes and Rumbaut 2006) with the strongest support for selective assimilation (Gibson 1988; Waters 1994; Waters 1999; Zhou and Bankston 1994; Zhou and Bankston 1998). However, segmented assimilation as it is currently applied is more descriptive than predictive of the variable range of assimilation experiences. There are two fundamental problems largely responsible for the typological treatment of the segmented assimilation perspective. First, the lack of a clear model detailing how the determinants, both individual and contextual, relate to one another and in particular how to coordinate the theory's use of both the process (assimilation versus selective acculturation) and outcomes of assimilation (upward and downward mobility) (Xie and Greenman 2005). Second, the availability of adequate data necessary to measure critical individual level variables and the broad array of contextual effects of the family, neighborhood, school, and ethnic community are in short supply (Zhou 1997). For instance, the once popular use of Census data to

examine the conditions of immigrants is no longer viable as the ability to identify generational status was lost in 1980 (i.e., removal of parental birthplace questions) making it nearly impossible to directly identify children of immigrants (Hirschman 1994), and the availability of contextual measures are nearly absent. These two issues may explain in large part why past empirical investigations have invoked the segmented assimilation theory as a possible explanation without explicitly testing it (Hirschman 2001; Landale, Oropesa and Llanes 1998).

As with the previous two theories, situating the segmented assimilation perspective firmly within the status attainment model offers a framework for rigorously testing the theory's main propositions. Building on the Wisconsin extension of the status attainment model, where the social psychological mechanisms of encouragement and aspirations mediate family background and educational attainment, segmented assimilation theory emphasizes the contextual environment as an important determinant of the immigrant experience. With respect to this fully elaborated model, contextual measures are regarded as "predetermined" variables—like those of race and other socially ascribed characteristics, family background, and mental ability discussed in others models—such that the model asserts nothing about how these variables are themselves determined. To illustrate the basic relationships, Figure 3.3 details a generalized model of segmented assimilation within the status attainment framework. For brevity, parents' "protective" influences of selective acculturation are not shown, but are likely to mediate potential influences of significant others (i.e., peers and other role models) and the nature of their children's social interactions dependent on family background and the social context. According to segmented assimilationists, immigrant parents insulate their children from negative influences (real or perceived) by maintaining strong ethnic ties and traditional cultural values, which may include urging the use of their native language (spoken, written, and/or, read), promoting interactions with "similar" others (e.g., ethnically and/or culturally), and restricting participation in activities common to American adolescents (e.g., playing video games, watching movies, etc.). It is important to note here that the optimism hypothesis asserts English

proficiency as an important determinant for socioeconomic success, thus bilingualism may be a more appropriate characterization of linguistic acquisition.

Given these conditions of the segmented assimilation perspective, several testable hypotheses emerge. First, immigrant groups with relatively good resources (family background and reside in a favorable environment) and no pressure to maintain traditional cultural values are likely to rapidly achieve high levels of socioeconomic success (i.e., upwardly assimilate) over successive generations or perhaps already meet or exceed the native population within the first-generation. Second, if family and community resources are low and nothing is done to selectively acculturate, then downward assimilation is a likely pathway, particularly among nonwhite immigrants struggling in areas with high poverty, crime, and joblessness. Alternatively, if parents purposely limit incorporation and preserve strong ethnic social ties, serving as protective influence against an unfavorable environment, then achievement should be better than if children were allowed to fully assimilate. However, there is the possibility that deliberate avoidance of assimilation to the American mainstream may attenuate success or even lead to downward mobility as children of immigrants come to resent their parents domineering ways (Dewind and Kasinitz 1997). Thus, resource advantaged immigrant adolescents (middle or upper-middle class family background and neighborhood), who are pushed against their will to adhere to the cultures, values, and communities of their parents, may achieve less success across generations than if there was no undue pressure to uphold traditional ideals.

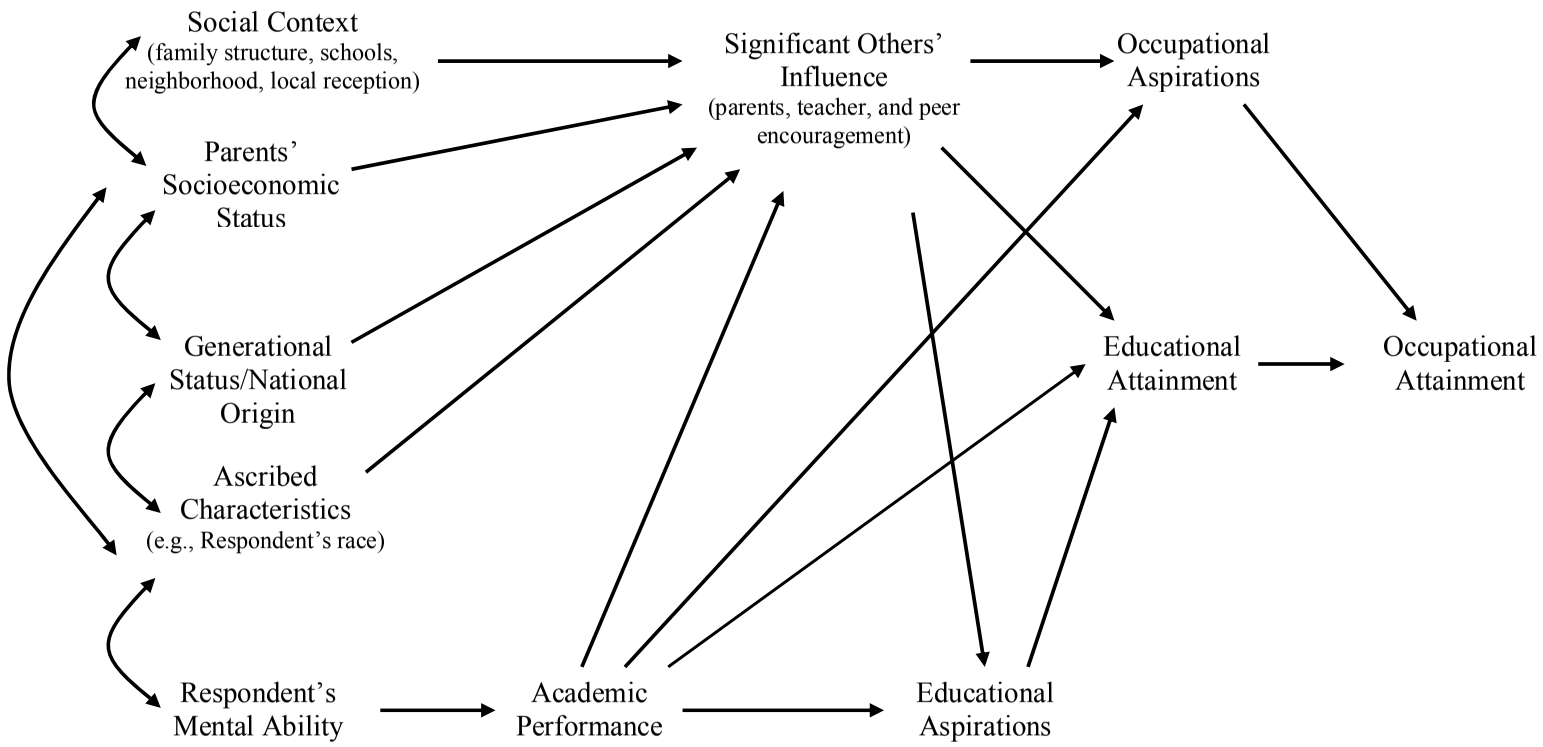


Figure 3.3. Generalized Model of Immigrant Assimilation

To summarize, the existing literature on the socioeconomic incorporation of contemporary immigrants and their descendants suggests three perspectives. First, the straight-line assimilation theory posits immigrants will have lowest levels of achievement, but that achievement will increase with generational status. Subsumed within the basic status attainment model, disparities in attainment across generations should be accounted for by differences in family background and prior achievements. Second, the immigrant optimism hypothesis predicts second-generation immigrants experience the highest levels of achievement as they inherit their parents' attitudes for upward mobility and have mastered the English language. Finally, the segmented assimilation theory predicts immigrants' paths of incorporation follow different trajectories as a result of variations in human and social capital, the context of reception, and parents' protective influence against full assimilation. This project evaluates the merit of these alternative hypotheses to explain immigrants' educational trajectories, focusing specifically on experiences in higher education, and employs the status attainment model as a common framework for integrating these theories and generating testable propositions.

Predictions for the Integrated Model of Immigrant Adaptation

Based on my discussion of the status attainment perspective as an overarching framework for evaluating immigrant incorporation, I now detail the specific hypotheses that underlie the relationship between immigrant status and socioeconomic outcomes according to the three accounts of immigrant assimilation described above—conventional linear assimilation, immigrant optimism, and segmented assimilation. Two types of predictions are important to consider. First, each theory makes claims regarding generational differences in the pattern of adaptation. Are immigrant youth increasingly likely to resemble the native population as their families spend more time in the U.S.? Does the generational pattern of incorporation exceed the achievement of

native groups by the second generation only to converge with older stocks in subsequent generations? Or, does immigrant assimilation unfold along more than one pattern whereby some immigrant youth experience upward linear assimilation and others encounter downward mobility? Thus, to evaluate the viability of these perspectives, it is necessary to consider the expected generational differences in the pattern of socioeconomic incorporation.

Second, each assimilation paradigm identifies determinants of the generational pattern or in some cases, the specific conditions under which immigrant groups follow particular paths to assimilation. To the chagrin of many immigration scholars, however, theories of assimilation rarely specify the key causal relationships that give rise to generational differences in immigrant outcomes (Hirschman 2001; Portes 1997; Xie and Greenman 2005). Instead, theories are generally ambiguous about how various determinants are related to one another, often making descriptive statements as opposed to concrete theoretical propositions. While this ambiguity offers a level of abstraction necessary for discerning the complexities of the immigrant experience, the absence of a coherent causal framework has given rise to a wide assortment of theoretical and operational interpretations. As a result, the core theoretical insights of the field have become diluted and efforts to engage in the cumulative enterprise of theory-building have in many ways stalled. In order to move forward, however, sometimes we must take a step back by drawing on past intellectual frameworks for guidance.

To this end, I formalize three central theories of immigrant assimilation—with the help of the traditional status attainment perspective—into a series of testable hypotheses about the trajectory of immigrant youth in postsecondary education. Figure 3.4 diagrams the synthesized status attainment model of immigrant incorporation. Specifically, the conceptual model details the core causal relationships articulated in conventional upward assimilation, immigrant optimism hypothesis, and segmented assimilation theories and are unified based on their correspondence with traditional status attainment research. It is important to note here that my use of a path model is

purely illustrative rather than exacting the precise causal ordering of the relevant variables. I empirically test the analytic framework of this project in Chapters 4 and 5.

Drawing on the path model in Figure 3.4, I now proceed to the specific hypotheses that underlie each theory, discussing both the generational pattern of adaptation and the determinants of the assumed pattern. The integrated status attainment model of immigrant assimilation is conceptualized as a "full" conceptualization of immigrant adaptation with all of the parameters of interest in it. Each of the assimilation paradigms are considered "nested" within the larger model. The nested models are said to be restricted as one or more of the parameters in the full model is restricted to some value (usually zero). Furthermore, the conventional assimilation theory and the immigrant optimism hypothesis are nested within the segmented assimilation theory, which is in turn nested with the larger integrated model. To distinguish the sets of factors associated with the different assimilation perspectives, the central mechanisms of each theory are identified by either a solid-line circle (straight-line), dashed-line box (optimism hypothesis), or solid-line box (segmented assimilation). Throughout this project, immigrant incorporation is associated with postsecondary educational outcomes thought to bring about socioeconomic success.

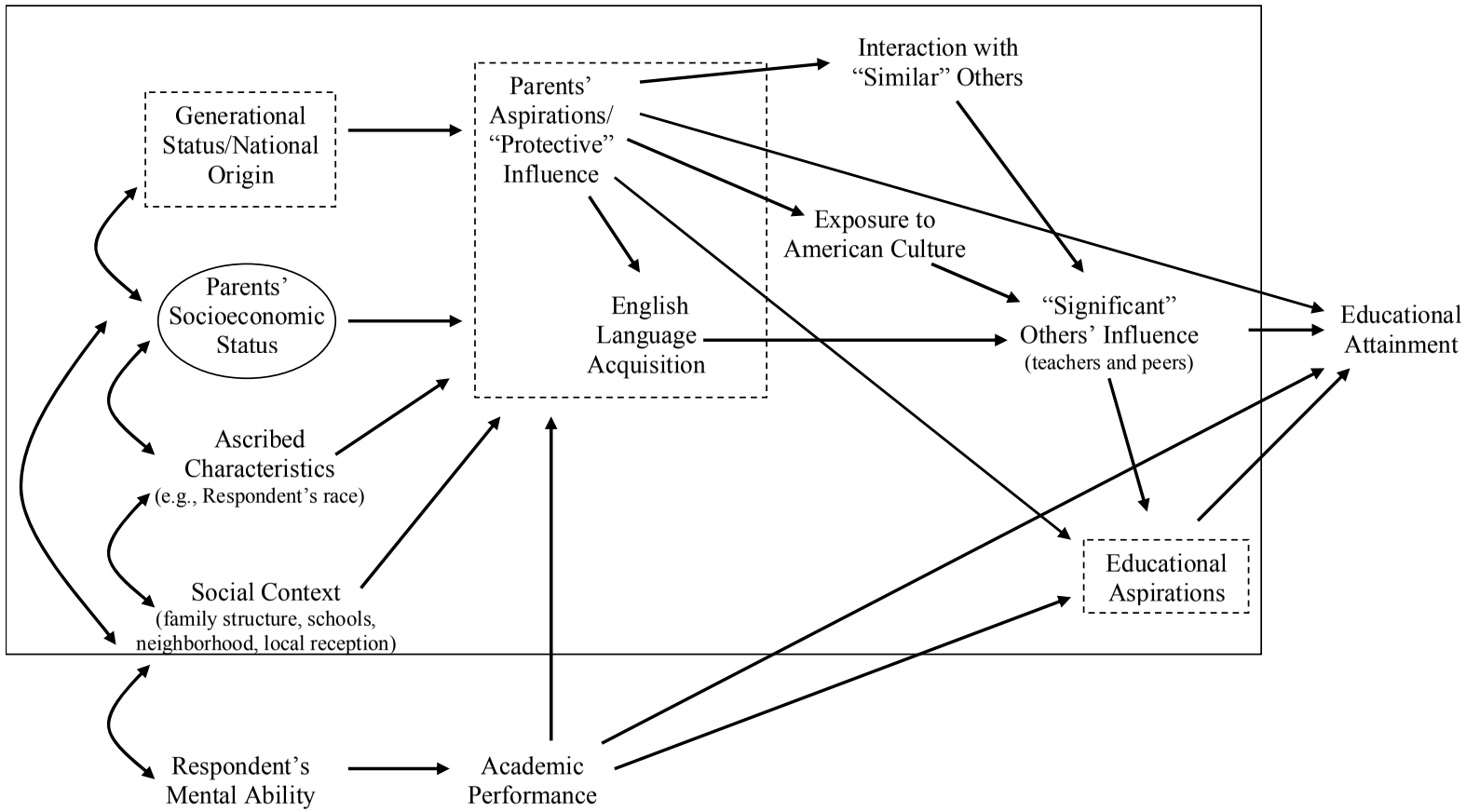


Figure 3.4. Integrated Status Attainment Model of Immigrant Assimilation

A. *Conventional or Straight-line Assimilation*: The theory asserts that immigrant adaptation, on average, occurs in an upward and linear manner with immigrants' lower socioeconomic achievements diminishing across generations. Rather than becoming indistinguishable from the native population, however, the theory emphasizes marked reductions in ethnic differences over time. Moreover, the status reformulation of the assimilation theory asserts that parental socioeconomic status accounts for nearly all of immigrant youths' status position.

The following hypotheses emerge from the conventional approach:

Hypothesis A1: Generational differences are upward (i.e., positive) and linear where first-generation immigrants achieve the lowest levels of success, followed the second-generation, and third- and higher-generation the highest level of education.

Hypothesis A2.1: Parents' socioeconomic status has a positive effect on educational outcomes, accounting for most or all of the generational variation in achievement.

Hypothesis A2.2: For advantaged immigrant groups (i.e., educational levels equal to or higher than the native population), family background will account for their overachievement. Stated differently, ethnic groups should neither be favored nor disadvantaged in the assimilation process net of controls for family background.

B. *Immigrant Optimism Hypothesis*: Identified by the dashed boxes in Figure 3.4, this theory argues that the assimilation process is curvilinear such that second-generation immigrant youth achieve the greatest level of success relative to their first-generation and third- and higher-generation counterparts. To explain this generational pattern, the theory posits that immigrant children adopt their parents' favorable attitudes and determination for upward mobility, which in turn leads them to behave in ways that promote socioeconomic success. Second-generation immigrants, unlike first-generation youth, are able to take advantage of their inherited ambitions because of their greater English proficiency and less cultural distinctiveness. The theory predicts that by the

third and higher generation, youths' optimism and aspirations for upward mobility diminishes due to their parents' weakened, less idealistic ambitions.

From the immigrant optimism approach, I generate the following hypotheses:

Hypothesis B1: The generational differences in socioeconomic success follow an inverted-U shape where 2nd generation immigrants will generally have the highest educational attainment relative to 1st generation immigrants and third and higher generation immigrants.

Hypothesis B2.1: Parents' aspirations for their child's upward mobility have a positive, direct effect on achievement as well as an indirect effect through student's aspirations for upward mobility.

Hypothesis B2.2: Student's aspirations for upward mobility have a positive effect on educational attainment.

Hypothesis B2.3: Parents' and children's aspirations account for the greater level of success of second-generation immigrants relative to the third- and higher-generations.

Hypothesis B3.1: Students' limited English proficiency has a negative effect on status attainment, capturing nearly all of the lesser achievement of the first-generation relative to second-generation immigrants.

Hypothesis B3.2: Controlling for parental and student aspirations for upward mobility as well as student's limited English proficiency, the first, second, and third and higher generations achieve equal levels of socioeconomic achievement.

C. *Segmented Assimilation*: This perspective, reformulated within a status attainment framework and identified by the solid-line box in Figure 3.4, contends that

the generational pattern of assimilation is bi-directional such that new arrivals and their descendants may follow a pathway of upward or downward assimilation. A pathway of upward or conventional straight-line assimilation is expected for immigrant groups with high levels of human capital (socioeconomic status) and who are received favorably by society. In contrast, immigrant groups who possess few resources and enjoy minimal community support are unlikely to achieve the stable employment necessary for upward mobility and consequently remain vulnerable to long-term poverty for themselves and their children. Moreover, immigrant parents' limited economic opportunities may force them to take up residence in poor, inner-city neighborhoods where their children are more likely to attend poorly performing and underfunded schools. Once enrolled in such disadvantaged schools, children encounter an "adversarial culture" among students and teachers that discourages valuation of education and aspirations for upward mobility.

Despite poorly situated immigrants' susceptibility for downward assimilation, parents may engage in selective acculturation whereby they seek to promote their children's upward mobility by limiting their assimilation into American society through actively maintaining traditional cultural values. In this way, parents' effort to preserve the culture of origin protects their children from assimilating too fully into a social environment that may reduce chances for upward mobility. Specifically, immigrant parents safeguard their children from negative influences by upholding strong ethnic ties and traditional cultural values, which may include restricting social interactions to those who are culturally and/or ethnically similar, limiting participation in activities common to American adolescents, and actively promoting the use of the native language (spoken, written, and/or read). It is through this cultural maintenance that parents are able to affect the direct influences of significant others (i.e., peers, teachers, and other role models) on their children's socioeconomic achievement and the indirect influences through their children's aspirations for upward mobility.

Although not addressed by the segmented assimilation perspective, it is unclear how parents' protective influences affect children in an advantaged context. On the one

hand, children may be relatively unaffected and achieve high levels of success regardless of their parents' desire to uphold traditional values. On the other hand, parents' protective influences could attenuate success or even lead to downward assimilation as children of immigrants come to begrudge their parents overbearing demands to carry on traditional ways. For example, resource advantaged immigrant adolescents (those who have a middle or upper-class family background and live in a moderate to upscale neighborhood), who are forced against their will to adhere to the culture, values, and community traditions of their parents, may achieve less success than if there was no undue pressure to uphold traditional ideals (Dewind and Kasinitz 1997). In fact, parents' social rigidity may even drive some immigrant youth to assimilate downwardly as an act of rebellion.[18] However, because segmented assimilation theory does not address whether selective acculturation benefits immigrant youth in an advantaged context, this analysis makes no a priori predictions regarding this assimilation pathway.

Generally, immigrants' assimilation trajectory, either upward or downward, result from variations in the socioeconomic resources groups can draw on at the time of their arrival, family structure, and the context of reception, which is itself contingent on geographic location of settlement, ascribe characteristics such race or skin color, national origin, and opportunities for mobility. In other words, the segmented assimilation paradigm suggests that generational differences in adolescent's outcomes depend on key qualities of the contextual environment (i.e., an interaction between generation status and the contextual environment). The exact relationships among these variables are complex and will be taken up later. Here, it is sufficient to say that these

[18] Hypotheses of rebelliousness among advantaged immigrant children is born out of the oppositional or counter culture framework, which refers to any subculture's rejection of conformity to prevailing norms and values. In the case of adolescent immigrant children, oppositional behavior is hypothesized to result from children's dissent over conforming to the traditional values of their parents' homeland instead of an Americanized lifestyle. It is plausible too that the greater the cultural divide between traditional values and those of typical American adolescent, the greater potential conflict between immigrant youth and their parents. Ultimately, conflict may rise out the varying pace of assimilation to American society between immigrant parents and their offspring.

contextual measures are regarded as predetermined variables as no assertions are made as to how they are themselves determined.

From the segmented assimilation perspective, I make the following predictions:

Hypothesis C1.1: In favorable communities, generation number is positively associated with socioeconomic achievement (i.e., upward assimilation).

Hypothesis C1.2: In adverse communities, the association between immigrant generation and socioeconomic achievement is negative (i.e., downward assimilation).

Thus, hypotheses C1.1 and C1.2 test for interactions between generational status (number) and the contextual environment.

Hypothesis C2.1: In adverse communities, parents' protective influences mediate the negative association between their child's generation number and socioeconomic achievement (i.e., selective acculturation).

Hypothesis C3.1: In adverse communities and under parents' protective influences, significant others have a *positive* effect of students' socioeconomic achievement.

Hypothesis C3.2: In adverse communities and absent parents' protective influences, significant others have a *negative* effect on students' socioeconomic achievement.

Hypothesis C4.1: Consistent with the immigrant optimism hypothesis, parents' and child's aspirations for upward mobility positively affects socioeconomic achievement with parents' aspirations partially mediated by their child's aspirations.

Hypothesis C4.2: Negative influences from significant others attenuate the effect of students' aspirations for upward mobility on socioeconomic achievement.

From Theory to Empirical Test

While previous research has treated the three primary theories of immigrant incorporation as oppositional, this chapter aligns these theories within the common framework of the status attainment model in order to generate testable hypotheses. Using the fourth wave of the *National Educational Longitudinal Study of 1988* (NELS:88/2000), which is a nationally representative panel data cataloging students' family and academic experiences over 12 years, the remainder of this dissertation project empirically evaluates the proposed reconciled model of immigrant assimilation and the theories that form it. It is important to note, however, that the NELS data and similar nationally representative survey, while containing rich information about respondents, are unable to evaluate definitively the above stated hypotheses due sample size limitations. Nevertheless, Chapter 4 tests the parsimonious specifications of conventional assimilation theory and optimism hypothesis to account for generational differences in postsecondary attainment. The greater complexity of the segmented assimilation theory, specifying a combination of individual and contextual-level factors, is tested in Chapter 5 using the same NELS panel data and analytic sample. The merits of each theory is evaluated in terms of its ability to explain, either by accounting for or at minimum narrowing, generational differences in the educational trajectories of immigrant groups like those observed in Chapter 2.

Chapter IV: Explaining Immigrant Generational Differences in Postsecondary Education under Traditional Immigrant Assimilation Theory and Optimism Hypothesis

Despite the limited time horizon of contemporary immigrants, early evidence suggests that paths to incorporation are quite divergent and hardly resemble the smooth, linear trajectory traditional assimilation theorists envisioned. Instead, the generational patterns of socioeconomic achievement among immigrant youth reveal a great deal of diversity and unevenness. In 1990, for instance, only 72 percent of Mexican immigrants ages 15 to 17 attended school compared to youths born in Asia who are as likely, at roughly 95 percent, to be in school as are native youths (Hirschman 2001). Comparisons across generational status, however, reveal a marked rise in school enrollment—both at the high school and college level—for Mexican-origin youth from the first generation to the second generation, and then falling off in the third generation (Keller and Tillman 2008; Landale, Oropesa and Llanes 1998). Asian immigrants, on the other hand, are among the most likely to graduate from high school or college, out-performing other immigrant and native children in general (Vernez and Abrahamse 1996) and across generations (Rong and Grant 1992).

These observations and the generational trends reported in Chapter 2 indicate that immigrant youth and the children of immigrants are generally successful in navigating the educational system—especially in contrast to native blacks. Yet, it is equally clear that generational status does not influence educational achievement uniformly among ethnic/racial groups (Kao and Tienda 1995). On numerous measures of scholastic success, immigrants of Asian-origin are most likely and those of Hispanic descent are least likely to benefit from having foreign-born parents (Perreira, Harris and Lee 2006; Rong and Grant 1992). The trends in educational attainment observed in Chapter 2, however, show that Hispanic immigrants (Mexican immigrants in particular) quickly overcome their disadvantaged origins by the second-generation, an improvement that dramatically exceeded the second generation edge detected among other ethnic groups. Immigrants with much darker skin tones from the West Indies and

Africa, although too few in number to generate reliable empirical estimates, may benefit most from their own foreign birth where the achievements of the second generation more closely resemble that of native blacks (Kao and Tienda 1995). The prevailing thought is that the legacy of American race relations tends to channel absorption not simply to the American mainstream, but to social standing as black Americans. Thus, for these immigrants and their descendants, there is a greater risk for following a path of downward mobility, though a precipitous decline across generations is not inevitable (Waters 1999).

Explanations for the differential rate of socioeconomic progress of the descendants of immigrant and ethnic minorities are much in dispute, among both the general public and the academic community. In the next two chapters, I empirically assess the merits of three prominent, yet competing theories regarding the socioeconomic incorporation of immigrants—straight-line assimilation theory, immigrant optimism hypothesis, and segmented assimilation theory. Specifically, I explore whether generational status per se or some other set of determinants account for the differential patterns of educational attainment in the years following high school. The goal is not to identify the single best theory of assimilation, but to uncover how the key relationships that underscore each perspective work together to explain distinctiveness in the immigrant experience. To this end, I apply an integrative approach by reconciling several assimilation perspectives within a status attainment framework, allowing a joint analysis of the theories' major tenets.

The next section of this chapter outlines the literature in which this investigation is embedded, as well as the theories that inform it. In subsequent sections, I describe the methodological approach applied, the data used in this analysis, and operationalization of the key dependent and independent variables. In this chapter, I present results for the straight-line assimilation model and optimism hypothesis theory for three successive levels of educational attainment: any postsecondary attainment, four-year college enrollment, and four-year college graduation. The next chapter

(Chapter 5) investigates whether the complexities of the segmented assimilation model offer a fuller account of immigrant assimilation experience.

Immigrant Educational Pathways

Because post-1965 immigrants have been in the United States a relatively short period and the bulk of the second generation are still children or adolescents, the full extent of new immigrants' incorporation into American institutions and socioeconomic mobility will not be apparent for several decades. In the meantime, researchers have focused on detailing the economic progress of new arrivals and their descendants, both over time and across generations. Until recently, the furthest researchers could delve into the long-term absorption of new immigrants was the comparative experience of second-generation immigrant children in primary and secondary schools. With the recent completion of several nationally representative surveys, researchers are now able to examine how immigrant youth engage postsecondary institutions in the years after high school and their subsequent educational achievement and attainment.

In mapping immigrants' socioeconomic trajectory, the years immediately after secondary schooling are of interest for two reasons—one obvious and one not. First, a better understanding of how immigrant youth and their native counterparts engage postsecondary education is important because individuals' successful navigation of the educational system during this time period is critical to their long-term employment and overall well-being. For instance, recent estimates by the U.S. Department of Education show that young adults with a bachelor's degree earn nearly 30 percent more than high school graduates and almost twice as much as high school dropouts—a pattern that also holds for white, black, Hispanic, and Asian subgroups (Planty et al. 2009).[19] In addition to financial rewards, people with higher levels of education generally experience better

[19] This pattern of greater returns for increasing levels of education has been well established since the early 1960s when data on earnings and education were regularly collected as part of the Current Population Survey (see, for example, Murphy and Welch 1989, 1993).

health as indicated by higher self-reported health and physical functioning, participate in positive healthy behaviors (e.g., exercising, not smoking, and not drinking heavily), and longer life expectancies (Ross and Wu 1995). Thus, unraveling the range of influences that mediate the association between immigrant generation and educational attainment could aid in the development of social programs that target youth at risk for lowered socioeconomic and health outcomes.

A less obvious, yet sociologically significant aspect of the time directly after secondary schooling is that it marks the first of several life course events in the transition to adulthood. That is, a departure from secondary schooling offers adolescents, many for the first time, an opportunity to make pivotal decisions regarding their economic future. For reasons that will become clear later, examining immigrant generational differences at this crucial junction may offer important insights into the factors that influence assimilation trajectories. Suffice to say for the moment, the decision many youth face as they exit high school is whether to continue their education. In fact, higher education has never been more accessible as barriers to enrollment have substantially lessened with more flexible forms of enrollment (e.g., two-year versus four-year institutions; brick-and-mortar institutions versus on-line classrooms; and part-time versus full-time) and made more affordable in the short-term through financial aid (Baker and Velez 1996). Thus, for a sizable proportion of adolescents, the choice to continue their education is *seemingly* less about whether to attend and more about where to attend.

It is important to note that greater accessibility to postsecondary education is not synonymous with greater equality of opportunity. The growth of the American educational system has coincided with a great deal of institutional differentiation. That is, as education shifted from an elite to a mass system, a number of institutional tiers emerged to absorb the growth in enrollment. Scholars have noted, however, that the expansion of educational opportunities to include higher levels of schooling, in and of itself, has not reduced class inequalities in attainment (Shavit and Blossfeld 1993). Raftery and Hout (1993), under their Maximally Maintained Inequality thesis, argue

that growth of the educational system has enabled disadvantaged groups to access opportunities only after the privileged have achieved even greater levels of schooling—an exchange that only lessens relative class inequalities as quantitative differences remain unchanged. At levels of education where attendance has become universal over time or less restrictive in the case of higher education, qualitative differences in the type of curriculum as well as the prestige of institutions have arguably supplanted quantitative differences. Proposing a theory of Effective Maintained Inequality, Lucas (2001) contends that in an era of quantitatively similar levels of schooling, the socioeconomically advantaged secure qualitatively better education. The stratification of higher education into two-year and four-year institutions, differences in the selectivity and prestige within these college tracks, and the social and economic returns to these differential paths are vivid examples of qualitative differences in the American system. Although such institutional variations increase points of entry into postsecondary schooling, low-status opportunities most accessible to those of less advantaged background yield moderate increases in social mobility, and far from parity with the economic elite. Yet, the structure of higher education plays a largely implicit role in students' decisions to pursue advanced schooling, as expectations are often tempered to status-congruent opportunities.

Students' decisions regarding their continued education, however, are not made in isolation, but depend in large measure on the advantages and disadvantages parents confer on them throughout their childhood. Indeed, the positive effects of parental background and expectations on their children's socioeconomic outcomes is well established (Blau and Duncan 1967; Featherman and Hauser 1978). Traced fundamentally back to the status attainment model, an approach popularized by Blau and Duncan (1967) and researchers at the University of Wisconsin, children's socioeconomic achievements are conceptualized as a function of family background where parental influences have largely indirect effects on labor market outcomes through educational attainment. The most immediate influence on young people's education is their parents' socioeconomic status and in particular, family income and

education. In fact, family background accounts for a sizable proportion (although not all) of the variation in educational outcomes of youth in general as well as disparities between racial and ethnic groups (Kao and Thompson 2003). Given the centrality of parental education and family income, social origins are widely considered a vital predictor of eventual academic outcomes among youth.[20]

While family background exerts great influence on a child's academic outcomes, researchers have been far more interested in how parental resources facilitate educational progress and moreover, what other preceding factors account for the variation in socioeconomic outcomes not picked up by social origins. Attempts to account for the residual variation in academic outcomes have been quite diverse. Some scholars have looked towards other structural characteristics, such as the quality of schools, peers, and communities, which have rather modest effects on individual outcomes (Coleman et al. 1966). For others (e.g., Charles, Roscigno, and Torres 2007), parents are seen as investing both their time and economic resources more directly into their children's educational advancement by talking to them about school, exposing them to elite cultural activities (Bourdieu 1984; DiMaggio 1982), making educational resources available in the home (e.g., computers) (Lareau 1989), and providing monetary support for a private primary and/or secondary school education and saving for college. Differences in the availability of these forms of capital (human, social, cultural, and economic) account for a great deal of the variation in academic outcomes, although differentials cannot be completely explained away.

For immigrant children and the descendants of immigrants, the translation of their childhood experiences and expectations into adult socioeconomic outcomes is less clear, if not paradoxical. First, immigrant and second-generation youth tend to achieve high levels of education that often exceed the native population (third and higher

[20] Consensus over the strength of the effect of parents' socioeconomic status on academic achievement is far from complete. For instance, based on a meta-analysis of journal articles published before 1980, White (1982) argues that family socioeconomic status and academic achievement are weakly correlated, especially when the individual is the level of analysis. In contrast, a more recent review of the literature by Sirin (2005), finding a magnitude of relation comparable to White's study, concludes that parents' socioeconomic background at the student level is one of the strongest correlates of academic performance, especially compared to the effect size of other factors.

generations) despite drawing on their parents' modest socioeconomic backgrounds (Glick and White 2004). Scholars have observed, however, that upward mobility is not ubiquitous among immigrant groups, but reflects the experience of certain immigrant streams. For instance, children of foreign-born parents of Asian descent tend to achieve high levels of educational attainment, often in excess of the native-born white majority and irrespective of their parents' socioeconomic background (Mare 1995). In contrast, newcomers of Latin American and Caribbean origins do not fare as well in the educational system where their attainment is close to that of native blacks (Kasinitz et al. 2008). Yet closer inspection among Hispanics reveals a great deal of variation as those of South American, Cuban and Dominican descent achieve educational levels near native-whites while those of Mexican origins and Puerto Ricans, who have immigrant-like experiences, have outcomes well below native blacks (Farley and Alba 2002). Studies by Portes and Rumbaut (2006, see Table 6 on pg. 69) and Kao (1995) also show considerable heterogeneity among Asian American groups where South Asians, Chinese, Koreans, and Japanese outperform whites on a number of educational measures, but Southeast Asians (e.g., Cambodians and Laotians) have outcomes comparable to blacks.

The picture of immigrants' social mobility is further complicated if one considers differences across generations. There has long prevailed a conventional wisdom that each generation will do better than one before; a belief entrenched in the national ethos of the "American Dream". For immigrants, considered disadvantaged by their lack of familiarity with the culture, education and labor market institutions, and in many cases with the language, upward mobility and eventual parity with the native population has often been framed as occurring slowly over time and across several successive generations (Glazer and Moynihan 1963; Gordon 1964; Park 1928; Park 1950; Park and Burgess 1969). Recent empirical evidence, however, shows that immigrants do not exclusively follow this conventional intergenerational rise to the mainstream. Instead, the pace of incorporation among immigrant groups, particularly in education, is far more variable across generations. For example, numerous studies on

turn-of-the-century and contemporary immigrant groups found instances when the second-generation surpassed the achievements of both their first-generation and more established third plus generation counterparts (Blau and Duncan 1967; Duncan and Duncan 1968; Farley and Alba 2002; Kao and Tienda 1995; Oropesa and Landale 1997; Rong and Grant 1992; Yang 2004). Commonly referred to as the second-generation advantage or edge, this pattern of incorporation has been observed across both high and low status groups upon arrival (i.e., Asians and Hispanics). In addition to an upward trajectory, others maintain that some immigrant groups, especially those of disadvantaged backgrounds, may follow a path of downwardly mobility over successive generations (Portes and Zhou 1993). These different pathways to incorporation have posed a challenge to researchers interested in understanding the mechanisms that underlie the immigrant adaptation process.

Explanations for the varied trajectories within and between immigrant groups are largely framed in one of two ways: cultural or structural. According to the cultural position, differences in mobility rates arise from immigrants' positive beliefs regarding ambition, hard work, and the valuation of education. For cultural purists, characteristics and values associated with upward mobility derive from cultural orientations that define ethnic groups' social and national origins and that of its citizenry (Rosen 1956; Rosen 1959). Others see immigrants' extraordinary qualities as indicative of immigrants themselves, who as a select population, had the drive and courage to move from one country to another (Kasinitz et al. 2008). Whether qualities of origin or the individual, cultural arguments of children's school achievement single out immigrants' positive cultural beliefs about the benefits of education as manifested in parents' higher educational expectations (Goyette and Xie 1999) and greater monetary savings for school compared to native white parents (Kao 1995); in contrast to more outward forms of involvement, such as speaking to their children about school or participating in school activities (Sue and Okazaki 1990). Instead, immigrant parents are seen as subtly transmitting values and expectations for worldly success to their children, leading to motivations and decisions that bring about socioeconomic achievement.

The notion that culture is linked to socioeconomic outcomes has largely fallen out of favor among social scientists,[21] especially with respect to cultural deprivation models used to explain the low performance of blacks (Duncan 1969; Lieberson 1980). However, the unique condition of immigrants and their children suggests that dismissing culture altogether as a possible determinant of social mobility may be premature. In fact, scholars are increasingly revisiting the relationship between culture and poverty as evident by the entire May 2010 issue of *The Annals of the American Academy of Political and Social Science*, which was dedicated to resurgence of interest in the role of culture. In the study of immigrant assimilation, the dramatic surge in achievement among the second-generation relative to more established residents suggests something distinctive about their recent immigration heritage (i.e., parents' status as an immigrant) and its impact on socioeconomic outcomes. As we will see in the next section, the immigrant optimism theory draws heavily on the cultural position to explain the occurrence of a second-generation advantage.

Structural explanations, in contrast, see the disparate pattern of immigrant incorporation within and between generations as a result of differences in social and economic resources and subsequent ability of groups to take advantage of available opportunities (Jacobs and Greene 1994). Immigrants who make the journey to the United States encounter numerous obstacles upon arrival, not the least of which includes proficiency of the English language. For a large segment of newly arriving immigrants, many of Mexican descent, low socioeconomic standing as a result of minimal opportunities in their homeland channels settlement into largely poverty-

[21] Locating poverty as a cultural trait can be traced crudely back to the work of Oscar Lewis (1959), who coined the phrase 'culture of poverty' in regards to the adaptive behaviors and attitudes of the poor to their economic plight. According to the culture of poverty argument, once this culture emerges, characterized by an ideology of hopelessness and despair and typified among individuals by a lack of impulse control, present mindedness, and a cynical attitude toward social institutions, it tends to perpetuate itself from generation to generation as children assume these basic values and attitudes. While Lewis explicitly connected behavioral patterns inconsistent with socioeconomic advancement to structural conditions in society, elaborations to his ideas on the origins and perpetuation of poverty muddled the argument. Lost was the central thesis that the burdens of poverty were systemic and therefore imposed upon members of society and instead, people were poor because their culture was deficient. Nevertheless, the culture of poverty concept has proven attractive to policymakers and politicians, strongly informing documents such as the Moynihan Report and the War on Poverty more generally.

stricken, inner-city communities where employment opportunities are few and schools are poorly performing and under funded (Massey, Durand and Malone 2003, pg. 47). Yet the receptiveness of the native population to immigrants also influences success rates, serving to deflect or augment newcomers' chances of upward advancement. For instance, race and ethnicity continue to play a prominent role in American society and discriminatory practices, although less overt than generations past, may constrain the economic advancement of some immigrant groups, particularly those identified as racially nonwhite (see Massey 1981) for review on the "cost" of being an ethnic immigrant).[22] On the other hand, ethnic enclaves appear to facilitate upward mobility by easing new immigrants' socioeconomic incorporation through the local economy and education system where shared language, social networks, and common cultural and religious practices offer a reprieve from an otherwise difficult and unwelcoming transition into the broader American institutions (Hirschman 2004; Kasinitz et al. 2008; Morawska 1990; Portes and Rumbaut 2006). In sum, the steadfast structuralist is likely to insist that differential rates of success observed among immigrant groups are attributable to differences in the education, skills, and resources they brought with them and the opportunities available after their arrival. The trajectory of incorporation then, reflects an adaptation to circumstances for which parents' social background plays a crucial role, rather than cultural values placed on upward mobility.

Taking stock of the structural and individual milieu in which immigrant youth and the children of immigrants broadly find themselves, the array of influences on immigrants' educational pathways becomes more transparent. On the one hand, opportunities for postsecondary education are structured by a variety of factors, which include cost, prior school achievement, family structure, and the proximity of higher educational institutions. Children of immigrants, however, engage the postsecondary system drawing on far few resources than more established residents. Moreover, unlike their native-born counterparts, immigrants are more likely to encounter additional

[22] Kasinitz et al (2008) contend that immigrants' nonwhite status may actually promote upward mobility as the civil rights movement fundamentally changed the meaning of race since the 1960s and opened several opportunities for advancement.

barriers specific to their status as foreign-born (i.e., limited proficiency of the English language) and their national origins more generally (i.e., ascribed identity as a racial minority). While these features of the immigrant experience may constrain opportunities, first and second generation immigrant youth are presumably advantaged by their parents' unmeasureable qualities that were instrumental in moving from one country to another—drive, ambition, courage, and strength. As immigrant adolescents embark on bettering their own situation, decisions about their educational pathway will likely be shaped by the very beliefs that drove their parents to seek a brighter future.

The years after high school, as young people achieve greater autonomy from their parents, represent the first clear expression of how parents' transmitted beliefs intersect with the opportunity structure and subsequently influence socioeconomic outcomes. Postsecondary education, unlike primary and secondary education, is not universal and requires prospective students to make pragmatic decisions regarding the continuation of their education. To the extent that assimilation is the cumulative effect of decisions made by immigrants and their descendants (Alba and Nee 2003), the decision on whether to pursue an advanced degree will say much about the direction of their socioeconomic incorporation.

Theoretical Background

A number of theories have been proposed to describe and explain the different educational trajectories of immigrant and native youth, each offering a different account of how structural conditions and cultural characteristics influence the assimilation process—often emphasizing one over the other. Three theories have received the greatest amount of attention: straight-line assimilation theory, immigrant optimism hypothesis, and segmented assimilation theory. In Chapter 3, I proposed a theoretical framework for reconciling these prominent theories of immigrant assimilation by drawing on their common components within the status attainment model. This chapter

provides an empirical assessment of that theoretical framework. Before turning to the synthesized model, I begin by briefly summarizing each theory.

The first widely accepted theory of immigrant integration is the straight-line assimilation theory or "assimilation theory" for short. Assimilation theory predicts that the descendants of immigrants will come to resemble the mainstream population within and across generations, whereby old cultural and behavioral patterns are shed in favor of new ones and that, over time, ethnic groups become virtually indistinguishable from natives. Recent interpretations of the straight-line theory (Kao and Tienda 1995; Perreira, Harris and Lee 2006) associate assimilation with economic success and those outcomes that bring about success (e.g., educational achievement). Thus, first-generation immigrants are expected to achieve the least success and third- and higher-generations the greatest level of educational achievement with disparities in attainment across generations accounted for by differences in family background and prior achievements.

The immigrant optimism hypothesis predicts an alternative assimilation trajectory wherein second-generation immigrants experience a dramatic increase in educational success relative to their first-generation and third- and higher-generation counterparts. This pattern of incorporation is commonly referred to as the second-generation advantage. According to the optimism theory, immigrant children assume their parents' favorable attitudes and determination for upward mobility (e.g., parents high valuation of education), which in turn leads them to behave in ways that promote educational achievement and early occupational success. Second-generation immigrants, however, are better able to capitalize on their inherited ambitions because of their greater English proficiency and less cultural distinctiveness (Kao and Tienda 1995; Landale, Oropesa and Llanes 1998). By the third generation, optimism and aspirations for upward mobility weaken as native-born parents become less idealistic—perhaps tapering aspirations for their children due to their long-term experience with institutional barriers and for minority groups, discrimination (Ogbu 1989).

Consequently, third-generation children achieve socioeconomic successes more closely resembling the general, non-immigrant population.

In contrast to the two previous theories, segmented assimilation theory emphasizes that new immigrants and their children follow different paths of incorporation into American society and that assimilation into the white middle class is just one of several pathways (Portes and Zhou 1993; Zhou 1997). The theory argues that since the United States is a stratified and unequal society (varying over time), new arrivals and their descendants may assimilate into different 'segments' of society. Immigrants' paths of incorporation follow different trajectories as a result of variations in the resources groups can draw on at the time of arrival (or for the children of immigrants, their parents' socioeconomic resources), family structure, and the context of reception—contingent on geographic location of settlement, "race" or color, national origin, and opportunity structure for mobility (Portes and Rumbaut 2001; Portes and Rumbaut 2006). From the segmented assimilation perspective, integration into the mainstream is far from a uniform process as outcomes vary within and between immigrant streams. In general, immigrant groups with high levels of human capital (higher socioeconomic status) and greeted favorably by society are likely to follow the classic pathway of upward integration. Alternatively, groups who hold few resources and encounter an unfavorably reception are at risk to long-term poverty for themselves and their children. A third pathway is one of selective assimilation, in which parents seek to promote their children's upward mobility but limit their acculturation to American society by actively preserving traditional cultural values.

While each of these theories offers important insights into the assimilation process, none has received overwhelming empirical support. Moreover, the theories are generally ambiguous about how various determinants are related to one another, often making descriptive statements as opposed to testable propositions. Although this generality promotes the high level of abstraction essential for disentangling the complexities of the immigrant experience, the lack of a reasoned causal framework has spawned a multitude of theoretical and operational interpretations. As a result, efforts to

identify the core mechanisms that underlie immigrants' socioeconomic incorporation have been slow to surface.

To overcome these issues, this analysis draws on the status attainment model as an over-arching framework for analyzing the three perspectives on immigrant adaptation. Discussed in Chapter 3, the status attainment model provides a coherent conceptual framework for coordinating these theories, outlining the basic causal processes that facilitate the social and economic movement of individuals across and within generations. Moreover, the model is flexible enough to accommodate the increasing levels of abstraction that underscore contemporary theories of assimilation, providing a foundation for superimposing these theories on each other and thus generate a series of testable propositions. Taken together, the status attainment model is well positioned to investigate whether generational status per se or other factors are responsible for whatever achievement differences are observed. More importantly, however, by organizing theories of assimilation within the status attainment framework, we can hypothesize under which conditions generational status may matter and when its effects are attenuated.

Integrated Model of Immigrant Status Attainment

Drawing upon the status attainment and assimilation literatures, Figure 4.1 illustrates the core causal relationships articulated in conventional upward assimilation, immigrant optimism hypothesis, and segmented assimilation theories, and reconciled based on their correspondence with traditional status attainment research. It is important to note here that the use of a path model diagram is not to outline the precise sequence of causality. Rather, the present order offers a plausible set of relationships that best conceptualizes the assimilation process. However, assuming causality runs in a manner similar to Figure 4.1, intervening variables mediate the influence of preceding variables as well as adding explanatory value. The integrated status attainment model of assimilation is formulated as a "full" conceptualization of immigrant adaptation with all

of the parameters of interest in it. Each of the assimilation paradigms is considered "nested" within the larger model. To differentiate the complex set of determinants associated with the theoretical perspectives, the central mechanisms of each theory are cordoned off by either a blue solid-line circle (straight-line), red dashed-line boxes (optimism hypothesis), or black solid-line box (segmented assimilation).

To thoroughly evaluate the fully reconciled model and component theories, this investigation examines each theory separately, and gradually increases the complexity by layering the different model elements upon one another. As such, this chapter takes on the two most parsimonious theories: conventional straight-line and optimism hypothesis. Isolated in Figure 4.2, both theories emphasize capacities at the individual level as the primary mechanisms of successful integration. For the straight-line theory, parents' socioeconomic background is the key covariate underlying generational differences. The optimism hypothesis stresses the importance of parents' expectations for their child's upward mobility, the transmission of those aspirations to their children, and English language acquisition as the central relationships accounting for the generational disparities, particularly the second-generation advantage. The specific relationships that underlie each theory are formalized—aided by their arrangement in a common status attainment framework—into a series of testable propositions.

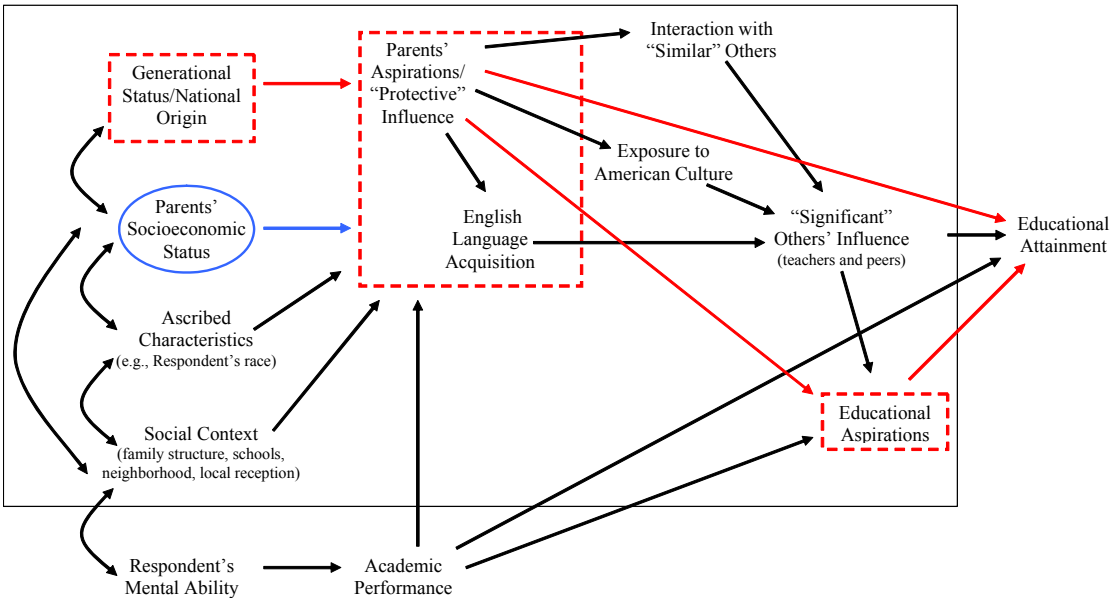


Figure 4.1. Integrated Model of Immigrant Assimilation (Revisited)

The status reformulation of the *straight-line* or *conventional assimilation theory* predicts that parents' socioeconomic status accounts for nearly all of intergenerational mobility among immigrants. The theory asserts that immigrant adaptation, on average, proceeds in an upward and linear manner with immigrants' lower socioeconomic achievements diminishing across generations. Rather than becoming indistinguishable from the native population, however, the theory emphasizes marked reductions in ethnic differences over time or, as in this project, across birth cohorts. On balance, parental background measures of income, education, and occupational status are considered the key mechanisms responsible for the differential pace of ethnic integration into the American educational system.

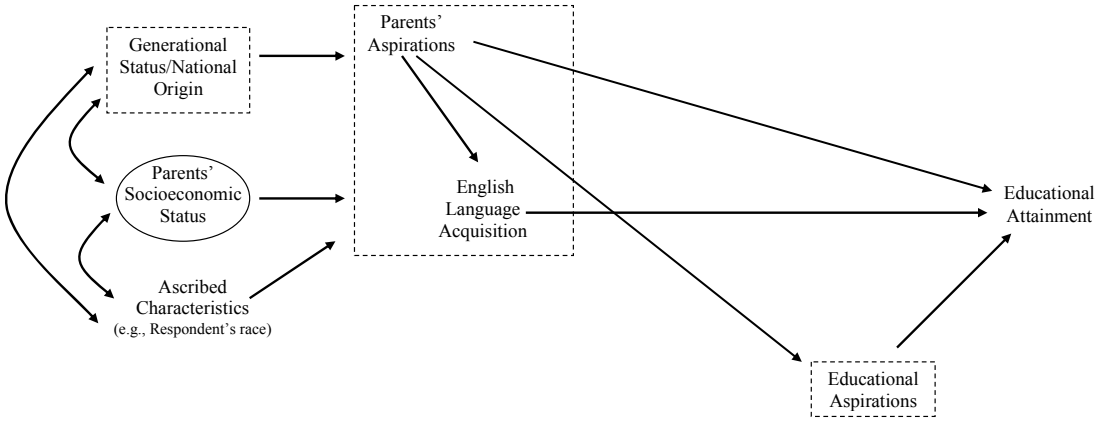


Figure 4.2. Educational Attainment Model for Conventional Assimilation Theory and Optimism Hypothesis

I partition the conventional approach into three hypotheses of increasing specificity.

Hypothesis A1: Generational differences are upward and linear where first-generation immigrants achieve the lowest levels of success, followed the second-generation, and third- and higher-generation the highest level of education. Algebraically, I express the hypothesis as

$$\text{Educ}_{\text{Gen 1}} < \text{Educ}_{\text{Gen 2}} < \text{Educ}_{\text{Gen 3+}} \tag{4.1}$$

Hypothesis A2.1: Parents' socioeconomic status (SES) has a positive effect on educational outcomes, explaining most or all of the variation between generations in educational attainment. Similar to Hypothesis A1, we have generational parity in educational attainment controlling for or given (|) the positive effect of parental socioeconomic status (SES) expressed as

$$\left(\text{Educ}_{\text{Gen 1}} = \text{Educ}_{\text{Gen 2}} = \text{Educ}_{\text{Gen 3+}}\right) \mid \text{Effect of parental SES} > 0 \tag{4.2}$$

Hypothesis A2.2: Ethnic groups should neither be favored nor disadvantaged in the assimilation process net of controls for family background. To put it another way, even

for the most advantaged ethnic immigrant groups, family background accounts for their overachievement. Thus, for individual, *i*, in ethnic group, *j*, we have

$$\left(\text{Educ}_{\text{Gen 1}} = \text{Educ}_{\text{Gen 2}} = \text{Educ}_{\text{Gen 3+}}\right)_{\text{Ethnic}_{ij}} \mid \text{Effect of Parents' SES}_{\text{Ethnic}_{ij}} > 0 \quad (4.3)$$

The *immigrant optimism hypothesis*, identified by the dashed line, asserts that the critical relationship underlying generational differences is immigrant parents' extraordinary expectations for upward mobility which are transmitted to their children who then behave and make decisions consistent with these inherited aspirations. Taken as a whole, the theory conceptualizes the assimilation process as curvilinear such that second-generation immigrants achieve the greatest level of success relative to their first-generation and third- and higher-generation counterparts—a pattern commonly known as the second-generation advantage. As children of foreign-born parents, the first and second generations benefit from their parents' favorable attitudes and determination for worldly success. However, the second-generation immigrant, unlike the first-generation, is able to take advantage of their inherited ambitions because of their greater English proficiency and less cultural distinctiveness. By the third and higher generations, optimism and aspirations for upward mobility are thought to lessen due to their parents' weakened, less idealistic ambitions.

The immigrant optimism hypothesis is formalized into the following hypotheses:

Hypothesis B1.1: Second-generation immigrants achieve the highest levels of educational attainment relative to the first-generation and third- and higher-generation. In other words,

$$\text{Educ}_{\text{Gen 1}} < \text{Educ}_{\text{Gen 2}} > \text{Educ}_{\text{Gen 3+}} \quad (4.4)$$

Hypothesis B2.1: Parents' expectations for their child's upward mobility have a positive, direct effect on child's educational achievement. Stated mathematically as

$$\text{Effect of Parents' Expectations} > 0 \tag{4.5}$$

Hypothesis B2.1: Child's expectations for upward mobility have a positive effect on educational attainment

$$\text{Effect of Child's Expectations} > 0 \tag{4.6}$$

Hypothesis B2.2: Second-generation and three-plus generation generally have equal levels of educational attainment given or net of parents and child's expectations for upward mobility. In this case,

$$\left(\text{Educ}_{\text{Gen 1}} < \text{Educ}_{\text{Gen 2}} = \text{Educ}_{\text{Gen 3+}}\right) \mid \left(\text{Effects of Parents' and Child's Expect}\right) > 0 \tag{4.7}$$

Hypothesis B2.3: First-generation and second-generation immigrants have equal levels of educational attainment given controls for the negative effect of student's limited English proficiency (LEP), all else being equal. Expressed as

$$\left(\text{Educ}_{\text{Gen 1}} = \text{Educ}_{\text{Gen 2}}\right) \mid \text{Effect of LEP}_{\text{Child}} < 0 \tag{4.8}$$

Hypothesis B2.4: Generational differences are equal given controls for Parental and student expectations for upward mobility as well as students' limited English proficiency. In sum,

$$\left(\text{Educ}_{\text{Gen 1}} = \text{Educ}_{\text{Gen 2}} = \text{Educ}_{\text{Gen 3+}}\right) \mid \left(\text{Effects of Parent \& Child Expect and LEP}\right) \tag{4.9}$$

Data and Analytic Approach

To examine students' educational career paths and test the theoretical propositions outlined above, this analysis begins by documenting ethnic and generational differences in adolescents' postsecondary participation. Given the diversity of postsecondary options, this investigation explores the extent to which

immigrant and native-born youth differ across three levels of educational attainment: enrollment in any postsecondary institution (i.e., attendance in a 2- or 4-year college), enrollment in a four-year college, and graduation with a four-year bachelor's degree. I then rely on multivariate regression to examine how observed generational differences are explained by the predictors and conditions set forth by each theory. The merit of a theory is assessed by regressing successive sets of covariates that correspond to the hypothesized relationships, noting whether particular effects operate in the predicted manner. Thus, the goal of this analysis is not merely to explain away the statistical relationship between generational status and education by adding control variables, but rather to explain why the generational pattern exists—assuming causality is approximate to Figure 4.2.

Data for this investigation come from the fourth wave of the National Education Longitudinal Study (NELS:88/2000) produced by the National Center for Education Statistics (NCES). Beginning with a nationally representative sample of 24,599 students in the 8th grade from 1,052 randomly selected schools in 1988, the NELS follows these students with subsequent surveys in 1990, 1992, 1994, and 2000 and logs information on their family and home life, educational aspirations, and academic experiences. The study was designed to capture critical transitions experienced by students as they leave middle or junior high school, and progress through high school and into postsecondary institutions or the work force. To ensure comparisons across minority populations, black, Hispanic, and Asian students were oversampled. Supplemental surveys distributed to the student's school administrator, two teachers, and one parent provide additional information on family and school characteristics. The NELS 2000 follow-up, in which 12,144 students participated and eight years after the high school graduation of most of the sample, collects information on students' post-high school experiences including high school completion, postsecondary educational experiences, and early labor market experiences. The NELS data therefore are well suited for this analysis because it contains richer information on the educational progress of ethnic minorities

and the factors that potentially influence their postsecondary trajectories than any other data set currently available.

For each level of educational attainment beyond high school I estimate a baseline logistic model,

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 G_i + \beta_2 A_i + \beta_3 X_i + \varepsilon_i \quad (4.10)$$

where P is the probability of postsecondary attainment for individual i; G_i is a set of covariates for ethnic and generational status; A_i is an indicator for any primary schooling outside the United States among immigrants; and X_i controls for the sex composition of the sample. Recent research suggests that age at immigration and, in particular, whether immigrant youth received any schooling in their native country impacts the rate of assimilation and school achievement (Glick and White 2003; Oropesa and Landale 1997; Rumbaut 1997). It also seems prudent to adjust ethnic variations in education by sex as women have recently surpassed men in both bachelor's and graduate or professional degree attainment (U.S. Department of Education 2008), Table 258).

The second estimated model adds variables testing the conventional straight-line theory of immigrant assimilation,

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 G_i + \beta_2 A_i + \beta_3 X_i + \beta_4 C_i + \varepsilon_i \quad (4.11)$$

where C_i is of vector of determinants for social and economic background. Socioeconomic background is commonly measured by parental education level, occupational status, and income. According to the conventional model, socioeconomic background accounts for nearly all of the differences between generational groups.

The third model tests the immigrant optimism hypothesis. Specifically, I estimate the following equation:

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 G_i + \beta_2 A_i + \beta_3 X_i + \beta_4 C_i + \beta_5 O_i + \varepsilon_i \quad (4.12)$$

In Equation 4.12, the addition of O_i introduces a vector of determinants for parental and child expectations for educational attainment and a measure of youth's limited English proficiency. In theory, immigrant parents' high valuation of education, which is passed onto their children, is argued to account for the often-observed second-generation advantage in education among the native-born children of immigrants. First-generation immigrant youth, according to the theory, are unable to take advantage of their aspiration for upward mobility due to their limited mastery of the English language. On balance, a set of nested models evaluate the addition of (1) parents' expectations, (2) students' expectations, (3) and limited English proficiency status to Equation 4.12.

In regression analysis, the error term capturing all of the other factors that influence the dependent variable not included among the independent variables, ε_i, is assumed independent and identically distributed (i.i.d. N(0,1)). Since students sampled in the NELS:88 data are clustered within schools, responses are not truly independent from one another. Instead, errors between students in the same school may be correlated, leading to underestimated standard errors as students appear more similar to one another than if the sample were drawn randomly. To adjust for this sampling design, logistic regressions are performed by means of PROC SURVEYLOGISTIC in SAS Version 9.2 and apply a cluster sample estimator statement to account for clustering within schools. The cluster statement assumes errors are independent across groups, but correlated within groups.

Results are weighted using the 1988 Panel weight (P4NLWT) in order to adjust the NELS data to reflect the number of eighth graders in the population in 1988. To minimize the effect of large sample size on standard errors, the panel weight P4NLWT is divided by the average weight of the analytic sample resulting in ADJWEIGHT. The adjusted weight yields a weighted number of cases equal to the total number of observations in the data. If the weight number of cases differs widely from the unweighted number of cases, test of significance will be biased. All analyses are generated using ADJWEIGHT.

Analytic Sample

Attention is confined to those students who participated in all four data collection waves and had a complete parent survey, yielding an initial sample of 10,269 respondents. To minimize bias of the 1988-2000 sample, particularly during the six years between the third and fourth follow-up, NCES used the third follow-up sampling frame to oversample groups unlikely to respond or who were deemed difficult to locate. Although NCES constructed sample panel weights to account for the unequal selection probabilities and make the sample representative of the eighth-grade class of 1988, the sample is more educated than is the population of similarly aged peers.

Specifically, a weighted comparison between the NELS sample and cohort of respondents born in 1973-1975 (the birth years for the majority of NELS participants) from *Current Population Survey (CPS)* data explored in Chapter 2 shows that NCES respondents are more likely to continue their education after high school across ethnic and generational groups (see Appendix D). Most of the educational advantage of the NELS sample is from their enrollment in any type of postsecondary school where the differences range from 10 to 45 percentage points.[23] This greater likelihood of college attendance among NCES participants could be the result of several sources of bias, from such psychological explanations as the Hawthorne effect – students are more likely to attend college simply because they are in a study that tracks educational achievement – to simply the ease of tracking college-goers versus students who drop out. The higher college attendance of the NELS sample, however, does not translate to higher rates of bachelor's degree completion where the differential is closer to zero and, for some groups, rates are greater among the CPS cohort (see, for instance, 1.5 and third generation Asians).

Obscuring comparisons between these survey samples, however, are the relatively small ethno-generational sample sizes in the NELS data. While nationally representative surveys often oversample certain groups (such as ethnic minorities),

[23] The Current Population Survey does not report four-year college enrollment, no degree completion—thus this attainment category is not applicable (n.a.).

super subpopulations, such as ethnic groups by immigrant generation, are rarely oversampled or considered in the data collection process even though such efforts typically produce the richest data (the NELS data is no exception).[24] The problem is that even with a large nationally representative data set, small-subsample sizes are sensitive to sampling error and predictive power, which make it difficult to be confident about conclusions based on such data. The numbers of respondents in the subgroups from the NELS, although greater than the scholarly standard minimum sample size of 30 and most above 100, are still tenuous estimates of educational attainment for some groups. Thus, the reader should take caution when interpreting and generalizing empirical results for small ethno-generational subgroups; for instance 1.5 generation non-Hispanic whites, who number just above seventy, and 1.5- and second-generation non-Hispanic blacks, who are combined into one category for this analysis (immigrant parents), include less than 100 respondents.

At issue – and one often taken up by statisticians and economists – is that of statistical power, or probability that a test will reject a false null hypothesis (also known as the probability of not committing a Type II error or false negative). In other words, statistical power is the confidence that nonsignificant differences between groups truly do not differ. Sociologists on the other hand, often forced to rely on existing survey data to answer research questions rather than developing original data collection efforts that are costly and time consuming, tend to place less emphasis on statistical power and power analysis (minimum subsample size to reach an acceptable level of statistical power). The literature, moreover, tends to downplay the intricacies involved in power calculations for numerous subgroups studied using complex statistical analysis—these include but are not limited to the true effect size of each subgroup on the outcome of interest, net of other background factors, and the corresponding standard error for each subgroup effect size. Because data on immigrants often lack the richness to control for important background influences and suffers from similar small subgroup samples, parameters to reliably determine power calculations are difficult to discern. This

[24] Chapter 2 discusses the trade-offs between sample size and data richness that research studies of immigrant assimilation face.

analysis, as other studies of immigrant adaptation, makes do with the best available data despite shortcomings in subgroup size and cautions readers to examine the full complement of results across ethno-generational groups.

To minimize the sensitivity of small ethno-generational subsamples to sampling error and modest statistical power, this analysis follows two of Cheng and Powell's (2005) recommendations for dealing with small subsamples. First, to prevent any further reductions in the generational sample sizes due to missing or incomplete data, multiple imputation is used to replace missing information rather than other ad hoc methods such as listwise deletion and mean substitution, which decrease the sample or reduce the efficiency of estimates.[25] Retaining all observations is particularly important for studies of immigrant generations as generational status (defined as 1.5, second, and third and higher generations) is determined by three separate indicators: place of birth of the respondent and his/her mother and father. Otherwise, incomplete information on any of the three birthplace measures results in further reduction of the subsamples. Although not part of Cheng and Powell's recommendations, this analysis also applies NELS-provided sampling weights to adhere the sample to the nationally representative population of eight graders surveyed in 1988.

To increase confidence in small subsamples results, Cheng and Powell recommend researchers examine multiple dependent variables "under the same conceptual dimension" instead of using one outcome measure (pg. 928). By investigating several outcomes using the same set of explanatory variables, the scholars contend that it becomes possible to identify a consistent pattern of differences between subsamples (large and small). In this way, the statistical power of the study is bolstered by developing a profile of effects for small ethno-generational subsamples that includes both the direct effect of ethno-generational membership on educational achievement as well as mediating effects that uncover the sources of such successes. Discussed below, this analysis makes use of multiple dependent measures of educational attainment from

[25] Noted elsewhere, multiple imputations is a more efficient method for addressing problems of missing data by using existing data to reflect the ordinary sampling variability and uncertainty resulting from missing information.

the NELS data in order to better generalize the pattern of results across generational groups.

While the full panel of NELS data offers small cell sizes for certain ethnic groups, and samples a group of students (8^{th} graders) at a very particular time (1988), its richness offers unparalleled insights into underlying differences between immigrant groups. Moreover, by drawing on respondents from the complete data series, variable measures selected from earlier or later waves capture the temporal ordering of responses and thus approximate the causal direction of influences. The restriction to only respondents with a parental survey is essential for two reasons. First, parents play a key role in their children's chances for upward mobility and for the children of immigrants, parental influences are central to theories of incorporation and their children's upward or downward trajectory. Thus, capturing direct measures of parents' beliefs about their children, rather than children's perceptions of their parents' expectations, is ideal. Second, it is on the parental questionnaire that parental and child birthplace information is collected and fundamental to identifying different immigrant generations.

The fourth NELS:88 follow-up conducted in 2000 is ideal for capturing the educational attainment of students who, at nearly eight years removed from high school, have sufficient time to enroll and complete a bachelor's degree within a year or two of high school graduation or GED completion. The outcome measures for this analysis—postsecondary educational attainment—come from students' self-reported college attendance and degree completion after high school until the fourth follow-up survey in 2000. Given the diversity of postsecondary options, this investigation explores how immigrant and native-born youth differ across three levels of educational attainment: enrollment in any postsecondary institution (i.e., attendance in a 2- or 4-year college) after high school, enrollment in a four-year college, and earned a four-year bachelor's degree or higher. Measures are treated as dichotomous with each nominal category representing a successive level of attainment and, on average, greater prestige and value

in the labor market.[26] Completeness of the data for all three postsecondary outcomes relative to the initial sample is high where only 108 respondents (1.05 percent) did not have complete profile of their educational attainment. Removing these respondents produces a final analytical sample 10,161 students.

Treatment of Missing Data

Although few of the variables have missing rates above 5 percent, a listwise deletion of all observations that have a missing value for at least one of the more than 30 variables considered for the fully specified model in Figure 4.1 would have reduced the sample by almost 50 percent, substantially lessening the already difficult-to-reach population of 1.5 and second generation immigrants. Thus, missing values are imputed in order to retain the maximum number of cases for analyses.

To minimize the amount of bias introduced into the model estimates, a multiple imputation (MI) approach is used to impute missing values. The advantage of MI over less sophisticated methods, such as mean replacement or adding an indicator variable for missing values, is the inclusion of uncertainty or variability into the imputation by taking into account the observed relationship among all the variables and drawing a likely value for the missing data point from the distributions of plausible values (Rubin 1996). Each imputation is used to generate *m* 'complete' data sets where each solution

[26] Studies of social stratification and educational attainment often employ Robert Mare's (1979; 1980; 1981a) model of educational transitions which treats school attainment as a sequence of discrete transitions from lower to higher educational levels. Unlike the current analysis, which estimates transitions for the entire sample, Mare restricted the analysis for each successive transition to those who had completed the *prior* educational transition. In other words, the Mare approach estimates the conditional probability of each successive transition given completion of the prior educational transition. The principal advantages of Mare's educational transition approach is that (1) the model is invariant to changes over time in the overall distribution of education and (2) the model conforms better to the way social scientists think about educational attainment (as a sequence of transitions). One of the consistent findings from the Mare model is that the effect of family background variables tends to decrease or "wane" across educational transitions. Due to sample size constraints of the NELS data, however, estimating logic models for only the sample members exposed to the risk (e.g., likelihood of bachelor's degree completion for only those students enrolled in a four-year college) produces a sample too small to generate reliable statistics.

produces a slightly different set of plausible values. Parameter estimates from the *m* separate data sets can then be pooled to obtain an improved estimate. A standard error of the parameter reflects the uncertainty within and between the solutions.

I follow the procedures outlined by Allison (2001) and use the imputation method available in SAS (PROC MI and PROC MIANALYZE) to replace missing values in the NELS data. Multiple imputation methods in SAS use the 'missing at random' assumption for all missing data procedures. Missing at random or MAR means that the missingness of the data depends only on the observed variables and thus the other variables provide the mechanism for explaining the missing values. While the MAR assumption is difficult to verify, it is more realistic than assuming missing values are independent of any of the variables in the data (known as 'completely missing at random').

Because the data for this analysis are missing in an arbitrary or general pattern (i.e. not monotonic), simpler methods of MI, which apply linear or logistic regression to impute values for a given variable using as regressors all the variables to the "left" of it, are incompatible.[27] The alternative approach is to use the Markov Chain Monte Carlo (MCMC) algorithm option in PROC MI to impute missing values. The MCMC method employs Bayesian inference to simulate draws from the posterior distribution of the missing data given the complete data (Rubin 1987). The problem, however, is that this method is based on the assumption of multivariate normality. For data that is non-normal, such as binary or categorical measures, missing values are replaced with continuous values, often falling outside the (0,1) interval. Many authors (e.g., Allison 2001; Schafer 1997) recommend rounding the imputed continuous values so that values greater than or equal to 0.5 are set to 1 and all else set to 0. A slight variation in this process described by Allison (2001, pg. 38-40) is utilized to impute missing values for categorical indicators. Although rounding imputed values is shown to produce biased estimates, especially when the true proportion is near 1 or 0 (Horton, Lipsitz and Parzen

[27] Although PROC MI has a IMPUTE=MONOTONE option in the MCMC statement, which will fill in enough of the missing values to make the resulting imputed data set have a monotone a pattern, model convergence is difficult to achieve if it actually ever converges for data far from having a uniform missing pattern.

2003), the relative bias is marginal when the fraction of missing is 5 percent or less (Ake 2005).

On balance, this analysis used PROC MI to create five datasets with different imputed missing values.[28] In order to accurately estimate interaction effects between the contextual environment, race/ethnicity, and generational status, separate chains of data augmentation were run by race/ethnic groups (white, black, Asian, Mexican, and other) and then recombined the imputation into a single data set from which interaction terms are then created. This process enables the relationship between generational status and the environment to vary across racial ethnic groups and allows the imputed values to reflect this variation (Allison 2001, p 51). The logistic regression model, using PROC SURVEYLOGISTIC to account for the survey weights and sampling design (i.e., clustering), was then run on each of the 5 imputed datasets. Results were combined using PROC MIANALYZE, which averages the coefficients across the multiple analyses and computes an adjusted t-test statistic. Model fit statistics are generated by averaging the -2 log-likelihood and AIC values across the five estimated models. A log-likelihood ratio test is used to compare improvements to the model fit for each successive model and sets of coefficients associated with the theories of immigrant incorporation. Table 4.1 presents the weighted means and standard errors of the central predictors and control variables used in the multivariate analyses.

[28] Following Allison (2001, pg. 53-54), multiple imputation procedures for each measure of educational attainment include the dependent variable as an auxiliary variable.

Table 4.1. Descriptive Statistics, Adjusted by Sample Weights

	Weighted Mean	Standard Error
Generational status		
1.5 generation	0.038	0.003
2nd generation	0.083	0.006
3rd plus generation	0.879	0.007
Race/ethnicity		
White	0.734	0.013
Black	0.119	0.010
American Indian/Alaskan Native	0.013	0.005
Asian	0.033	0.003
Mexican	0.066	0.007
Other Hispanic	0.024	0.003
Puerto Rican	0.010	0.002
1.5 generation schooled outside U.S.	0.015	0.002
Female	0.503	0.008
SES index	-0.209	0.197
Parents' school expectations/valuation		
Child to continue education after high school	0.902	0.005
College savings	0.467	0.009
Talk to child about school (index: 0-3)	2.439	0.009
Student's grade 10 educational expectations		
High school or less	0.125	0.007
Two-year or vocational college	0.297	0.007
Four-year college or higher	0.578	0.009
Limited English proficiency	0.023	0.006

N= 10,161 and includes missing values imputed using SAS's PROC MI and MIANALYZE.
Means are weighted to represent the survey population using SAS's PROC SURVEYMEANS.

Measurement of Key Covariates

This analysis employs the status attainment model as a common framework for integrating and evaluating the theories of immigrant incorporation. As such, there are several core covariates that are foundational to the status attainment perspective and from which the various assimilation theories emphasize as the key factor(s) associated with immigrants' assimilation experience. The traditional straight-line assimilation theory, for example, emphasizes parents' economic background as the most important factor accounting for disparities in educational achievement across generations (see Figure 4.1). The immigrant optimism hypothesis highlights the role of parents' high expectations for achievement, which are passed on to their children and proficiency in the English language as central for upward mobility. Finally, the segmented assimilation theory – examined in the next chapter – contends that variation in human and social capital, the context of reception, and parents' protective influence against full assimilation are the primary determinants of immigrants' assimilation trajectory.

Students' generational status, the key independent variable for this analysis, is determined by two variables from the 1988 parent survey: parents' and student's place of birth. Students are considered recent immigrants if they were born outside the U.S. or any outlying area of the U.S. (i.e., Puerto Rico) and at least one of their parents was also foreign-born.[29] Though foreign-born, because most of these students had entered the U.S. by the 8th grade and spent most of their adolescence outside of their countries of origin (only 40% percent had some schooling outside U.S.), they are not typically defined as *first-generation* immigrants in the literature. Instead, they represent what Ruben Rumbaut called the 1.5 generation, children born abroad but brought to the U.S. at an early age by their first-generation immigrant parents. Likewise, a student in the sample who is foreign-born with at least one foreign-born parent is recognized as belonging to the 1.5 generation. If the student was U.S.-born and at least one of his or her parents was born abroad, then the student was classified a second-generation

[29] Requiring that at least one foreign-born parent avoids classifying children who are born outside the U.S. to two native-born parents as immigrants.

immigrant. I identify U.S.-born respondents of U.S.-born parents as third- and higher-order generation immigrants, often referred to as natives of native parentage or simply natives.[30] Children who are foreign-born yet have two U.S.-born parents are also identified as part of the native population, reasoning that these students are simply born abroad and return to the U.S. (e.g., military children or adopted from outside the U.S.). In addition to generational status, control measures for other socio-demographic factors include race/ethnicity, gender, and 1.5 generation immigrants receiving any schooling outside the U.S. before the eighth grade.

To test the straight-line theory, I use the NCES generated variable SES to measure family socioeconomic background. Commonly used among researchers using the NELS (Glick and White 2004; Goldsmith 2009), the composite measure is an index constructed from base year information on household income, parental education, parental occupation, and household possessions such as computers, books, appliances, etc. When possible, the variable is based on parents' self-reports, otherwise students' responses are used. To ease interpretation, the SES index measure is rescaled by multiplying by 10 to produce a range of values from approximately -20 to 20.

The optimism hypothesis is evaluated using three sets of constructs: parents' expectations and valuation of their child's education, student's educational expectations, and student's limited English proficiency status. Three variables measured in the base-year are used to capture parents' educational expectations of their child. First, I rely on parents' reports of whether they expect their child to continue his/her education beyond high school (yes/no). A follow-up question asks, if *yes*; have you or your spouse started saving money for your eighth grader's education after high school (yes/no). Following Glick and White (2004), the third variable is a scale score based on three items: how often parents discuss with their child school experiences, high school plans, and post-high school plans. Each question is coded from never (0), rarely (1), occasionally (2), and regularly (3). Responses from each of three items are summed and divided by three to produce a scale from 0 to 3 where those who never

[30] The NELS data does not allow me to identify the exact generational status of U.S. respondents born to U.S.-born parents, thus limiting the reference group to the third or higher generation.

discuss school are coded as 0 and those who talk regularly as 3. Students' educational expectations are from their 10th grade response to how far in school they expect to go. Two dummy variables flag students expectations for either (1) two-year college or (2) four-year college or above. The reference category is high school or less. Finally, student's limited English proficiency is measured using a NCES-created indicator. The measure is generated from student's self-assessment and teacher evaluation for adeptness of the English language and coded as 1 for limited English proficiency (LEP) and 0 otherwise.

Variation in Educational Attainment

Weighted means for any postsecondary attendance, enrollment in a four-year college, and attainment of a bachelor's degree or higher by race/ethnicity and immigrant status are shown in Table 4.2. The sample mean for any college attendance at 26 years of age and roughly eight years after high school is 0.780. For four-year college enrollment and graduation, the sample means are 0.521 and 0.313, respectively. Thus, roughly 78 percent of mid-twenties adults in the United Stats are likely to experience some college or more, about 52 percent will have attended a four-year institution, and 31 percent are likely to have earned a B.A. or higher. Discussed in the *Analytic Sample* section, the educational levels in NELS data are higher than for similarly aged respondents in the CPS data where 47 percent attended any postsecondary schooling and slightly less than 31 percent earn a bachelor's degree. Differences by ethnic and generational status group, however, are more pronounced in some cases. Overall, true subgroup rates are elusive, especially for nationally representative and longitudinal data sets such as the NELS, which rely on smaller samples sizes and must track participants' progress over time and geographically. Irregularities in the results thought to arise from these issues are noted.

Consistent with other reports (Glick and White 2004; Vernez and Abrahamse 1996), when postsecondary experience is broken down by generational status, 1.5 and

second generation immigrants have educational attainment levels higher than long-term residents of third and higher generations. This finding generally holds true for all three levels of educational attainment, especially among second-generation immigrants. For instance, with no controls for socioeconomic background or other compositional differences, regressing any college enrollment on generational status confirms that the roughly 7 percentage point advantage in any college enrollment of the second generation (mean of 0.842) over third-plus generation youth (0.774) is a significant margin ($p < 0.01$). Moreover, while variation in generational status for four-year college attendance is not statistically different (means differences between the second- and third plus generations at the $p < .10$ level), the second generation achieve significantly higher rates of bachelor' degree completion than their third-plus generation counterparts; whereas the 1.5 generation, given their similar acclimation time to the U.S. environment, remains empirically undifferentiated from either group.[31] The academic community has coined this generational pattern the second-generation push or edge and it is the pattern of assimilation indicative of the optimism hypothesis.

Table 4.3 shows, as others have found (Kao and Tienda 1995; Keller and Tillman 2008; Mare 1995), and in-line with trends observed in Chapter 2, that the pattern of educational attainment among immigrant generations is much wider within racial/ethnic groups than for the total population. For some groups, there is evidence of generational decline, others a pattern of second-generation advantage, and in other cases trends of upward generational mobility. Moreover, differential patterns of generational change observed within race/ethnic groups also vary by level of educational attainment. For instance, a second-generation boost is evident for whites in any college attendance, yet they follow a pattern of generational decline in four-year college enrollment and bachelor's degree completion. The pattern is more consistent and dramatic amongst Asians, where all three levels of educational attainment display the telltale second-generation edge pattern with an increase in the second-generation and a significant decline thereafter (differences between the third-plus generation and 1.5 and second

[31] Given the similar acclimation times of 1.5 and second-generation immigrants to the U.S. environment, attainment rates are expected to be more similar than different (i.e., not statistical significant).

generations are at the p <.01 level respectively). It is important to note, however, that education levels for three-plus generation Asians are uncharacteristically lower than their ethnic counterparts of foreign parentage and compared to third-generation native whites.[32] Thus, results for long-term resident Asians, and other ethnic subgroups with unweighted N's near 100 or less, should be interpreted with caution.

Table 4.2. Postsecondary Attendance and Four-year Degree Attainment by Generational Status

	Any College Enrollment		Four-Year College Enrollment		Bachelor's Degree or Higher		Unweighted N[a]	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	Std Dev
1.5 generation	0.799	0.034	0.568	0.038	0.353	0.032	595	3.715
2nd generation	0.842	0.021	0.564	0.028	0.377	0.025	1,011	5.119
3rd plus generation	0.774	0.008	0.515	0.010	0.305	0.009	8,554	3.209
Total	0.780	0.008	0.521	0.010	0.313	0.009	10,161	0.000

Note: Means are weighted to represent the survey population using SAS's PROC SURVEYMEANS

[a] Use of multiple imputation procedures in this analysis generates five different dataset with missing values replaced in slightly different configurations for each imputation. Consequently, unweighted N's by generational status vary modestly across the imputed data.

Mexicans, on the other hand, have an upward generational trajectory for both types of college enrollment where each generation has rates of attainment greater than the next, although the second and third-plus generations are not statistically significant from the first generation. For bachelor's degree completion or higher, attainment among Mexicans follows a pattern of second-generation advantage. Among blacks and other Hispanics, who are grouped according to foreign-born parents (1.5/2nd generation) versus native-born to native-born parents (three-plus generation) due to insufficient numbers, having an immigrant parent is associated with higher rates of educational attainment at all levels. Moreover, consistent with the bimodal distribution of immigrant selectivity characteristic of contemporary U.S. immigration, 1.5-generation youth generally achieve exceptionally high rates of the college participation and graduation relative to native majority of third generation whites and their intra-ethnic peers. Generation 1.5 immigrants of Mexican descent are the lone exception where attainment

[32] Substantial differences are also observed for three-plus generation Asians in the NELS and CPS data where, for instance, bachelor's degree completion is 26 percent compared to 47 percent among CPS respondents (see APPEDNIX C).

rates are substantially less than the majority population and their ethnic compatriots. Overall, these findings highlight the need for analyses to explicitly differentiate groups by both their racial/ethnic origins and generational status—referred hereafter as ethno-generational status.

Postsecondary Enrollment

Table 4.4 presents results for the logistic regression testing the conventional assimilation theory and optimism hypothesis for any postsecondary enrollment—the least restrictive measure of educational attainment. To more easily examine immigrants' educational mobility and uncover the effects mediating observed differences, ethnic groups are arranged according to generational status with third and higher generation whites as the reference category. In this way, groups in the 1.5 and second generations correspond to ethnic minorities' adaptation to American society and reflect differences in their parents' immigrant selectivity while the third and higher generation uncovers ethnic disparities among long-term residents. Results for ethno-generation groups are relative to third generation whites with intra-ethnic comparisons available in a separate table and reported as the simple subtraction between the odds ratio coefficients (e.g., odds ratio generation 2 – odds ratio generation 3).[33]

The first model in Table 4.4, controlling for exposure to the American educational system and gender, shows that rates of postsecondary enrollment among ethno-generational groups differ markedly from the native majority. Among new arrivals, ethnic blacks and other (non-Mexican) Hispanics are significantly advantaged by their foreign origins with enrollment 10.102 and 3.236 times as likely as are third-plus generation whites. Relative to their long-term resident minority counterparts shown in Table 4.5, black (9.322) and other Hispanic (2.293) adolescents of foreign

[33] Statistics for 'times greater than' comparisons *among/within* ethnic groups by generational status are calculated from the following equation: $1 + (\frac{ethnogeneration\ X - ethnogeneration\ Y}{ethnogeneration\ X})$

parentage have odds coefficients 12.943 and 3.430 times greater, suggestive of a high degree of immigrant selectivity among the parents of these groups. The independent effect for 1.5-generation immigrants attending school outside the U.S. before the eighth grade on future college enrollment is not significant. Results indicate, however, that women are 23 percent more likely to enroll in some type of postsecondary school than are their male counterparts.

Table 4.3. Postsecondary Educational Attainment by Ethnic Origins and Generational Status

	Any College Enrollment		College Enrollment		Bachelor's Degree or Higher		Unweighted N[a]	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	Std Dev
Non-Hispanic White								
1.5 generation	0.863	0.048	0.719	0.057	0.527	0.058	71	0.707
2nd generation	0.902	0.019	0.654	0.038	0.487	0.036	303	1.304
3rd plus generation	0.783	0.009	0.545	0.011	0.341	0.009	6,872	1.483
Non-Hispanic Black								
1.5/2nd generation	0.970	0.021	0.781	0.055	0.352	0.105	59	0.548
3rd plus generation	0.739	0.026	0.426	0.030	0.182	0.020	840	0.548
American Indian/Alaska Native	0.644	0.045	0.243	0.040	0.106	0.030	99	0.000
Asian								
1.5 generation	0.877	0.061	0.714	0.057	0.489	0.052	341	2.000
2nd generation	0.955	0.018	0.773	0.040	0.623	0.046	237	1.949
3rd plus generation	0.823	0.052	0.482	0.049	0.260	0.041	112	1.673
Mexican								
1.5 generation	0.563	0.075	0.162	0.036	0.058	0.018	112	1.871
2nd generation	0.685	0.049	0.316	0.034	0.142	0.027	311	3.050
3rd plus generation	0.727	0.035	0.354	0.036	0.105	0.016	386	2.074
Other Hispanic								
1.5/2nd generation	0.918	0.022	0.675	0.070	0.403	0.061	173	1.304
3rd plus generation	0.776	0.044	0.419	0.053	0.246	0.052	144	1.304
Puerto Rican	0.763	0.078	0.395	0.061	0.136	0.050	101	0.000
Total	0.780	0.008	0.521	0.010	0.313	0.009	10,161	0.000

Note: Means are weighted to represent the survey population using SAS's PROC SURVEYMEANS

[a] Use of multiple imputation procedures in this analysis generates five different dataset with missing values replaced in slightly different configurations for each imputation. Consequently, unweighted N's by generational status vary modestly across the imputed data.

Consistent with a bimodal distribution of immigrant selectivity, Mexican newcomers have an educational disadvantage where the likelihood of attending college is 61.90 percent less than native whites. Mexicans' educational hardship persists into the second generation where the odds to attend college is 40.70 percent less. As shown

in Table 4.5, the difference in the odds ratio coefficients between 1.5 and second generation Mexicans are not statistically different (-0.212). By the third and higher generations, Mexicans achieve statistical parity with their white peers, yet only slightly exceed the enrollment rates of the 1.5 generation at the p<.10 level. Taken together, generational trends of postsecondary enrollment for students of Mexican descent are suggestive of an upward trajectory, although the pattern is far from definitive and may reasonably be attributed to their more modest family background.

A second-generation advantage is evident for ethnic white and Asian youth who are, respectively, 2.530 and 5.979 times as likely to attend college as third generation whites. An intra-ethnic advantage is present for Asians as well where, according to Table 4.5, the difference in the odds of attending college among second generation Asians is 4.660 times greater than the third plus generation (coefficient difference of 4.696). These gaps between the second and three-plus generation represent differences in the predicted probabilities of 0.13 and 0.11 for white males and females and, 0.14 and 0.12 for Asians respectively.[34] Although the odds of college enrollment among 1.5 generation Asians and whites are lower than their second-generation ethnic counterparts, the differences fail to reach statistical significance. Nevertheless, the upward mobility from the 1.5 to the second generation followed by a significant decline for third and higher generations is the signature pattern of the second-generation edge.

The second model in Table 4.4 introduces family's socioeconomic background into the estimated equation. Consistent with the conventional assimilation model, SES status is a significant factor for any college attendance, increasing the odds by 17.5 percent for every one-point increase in the index.[35] Yet, family background fails to explain much of the advantages and disadvantages observed between ethnic groups at this minimal threshold of postsecondary entry. In fact, social origins is only found to

[34] Calculated predicted probabilities by race/ethnicity, generational status and gender include second generation white (male: 0.892/female: 0.911); third plus generation white (0.766/0.801); second generation Asian (0.951/0.960); and third plus generation Asians (0.807/0.838).

[35] I also examined specifications in which family background was entered as separate measures for parental occupation, parental education, and family income. The pattern of results were nearly identical to those produced with the SES indicator.

account for the educational disadvantage of American Indians who are half as likely as third generation whites to attend any college. In most cases, controlling for SES status accentuates ethnic disparities. For instance, the superior attainment of recent black and other Hispanic immigrants increases while for third plus generation blacks and Puerto Ricans, once at statistical parity with whites, are now 77.8 and 152.8 percent more (or 1.778 and 2.528 times as) likely than third generation whites to attend some type of postsecondary schooling during the roughly eight years following high school. These results show that family background, particularly parents' limited economic resources, is a considerable obstacle to accessing postsecondary schooling for blacks and other ethnic groups.

The most striking findings appear for Mexican youth where the 1.5 and second generations, once at a net disadvantage, are 2.332 and 2.542 times as likely as are third generation whites to attend college. Moreover, once SES differences are factored out, a pattern of second-generation advantage emerges among Mexicans where the second generation has a 1.862 times greater odds of some type of postsecondary school enrollment than their three-plus peers (coefficient difference of 1.177 in Table 4.5). Taken together, these results show that disadvantage among adolescents of Mexican descent arises in large from their humble social origins where the poverty of immigrant parents suppresses their children's achievements. For second-generation youth in particular, who are a key benchmark for assessing (and shaping) a group's trajectory of incorporation, are doing especially well net of parents' socioeconomic background as revealed by an otherwise masked second-generation edge. Thus, controlling for the family background differences in Model 2, a second-generation boost is found among Mexicans and persists for whites and Asians (odds difference of 2.176 and 4.311 larger compared to their third generation counterparts in Table 4.5), which the Optimism Hypothesis maintains comes from immigrants' high expectations for upward mobility.

To explain the occurrence of the second-generational advantage and test the optimism hypothesis, Models 3-5 introduce successive nested sets of covariates for parents' educational expectations for their child at grade 8, student expectations as of

grade 10, and student's limited English proficiency (LEP) status. The pattern of results is generally consistent with the tenets of the optimism theory. Covariates for parental expectations and actions for their child's educational mobility, net of family background, are significantly positive and dampen the advantageous effects of the second-generation. For instance, students whose parents expect them to continue schooling beyond high school, save money for postsecondary schooling, and regularly talk about school experiences and plans have 9 times greater odds of attending any type of college after high school than a student whose parents have no educational expectations for their child. While controls for parental expectations in Model 3 show a lessening of the association between ethno-generation status and college enrollment overall, the second-generation advantage among Mexicans is mediated almost entirely by parents' influence as evident in Table 4.5.

The addition of student's educational attainment expectations in Model 4 further explains the differential pattern among ethno-generational groups. As expected, students who expected to attend 2-year/vocational college or four-year college during their sophomore year of high school are more likely to enroll in postsecondary schooling in the future relative to their peers who anticipated a high school education or less. For example, students' expectations of two-year or four-year college and higher have, respectively, 2.919 and 9.177 times higher odds of attending any type of postsecondary institution after high school, after adjusting for socioeconomic status and parental expectations. Notably and in-line with the optimism hypothesis, once students' expectations are taken into account, the second-generation edge observed among Asians and the remaining differences for Mexicans in Table 4.5 are no longer statistically significant, although the odds of college enrollment among both groups continue to exceed native whites. Moreover, students' expectations are influenced by their parents educational aspirations as the parental effects are lessened yet continue to have direct and independent consequences on young adults' long-term educational outcomes. In sum, these findings lend support for key the tenets underlying the optimism hypothesis, particularly for explaining the generational pattern among Asians.

Table 4.4. Logistic Regression Predicting Any Postsecondary Enrollment (Odds Ratio)

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
Ethno-Generational Status					
1.5 generation					
White	2.033	2.102	1.909	1.823	1.870
Black - 1.5/2nd generation	10.102**	18.663**	16.000***	16.556*	16.426*
Asian	2.233	3.080	3.038	2.518	2.677
Mexican	0.381**	2.332*	1.861†	2.373*	2.574*
Other Hispanic - 1.5/2nd generation	3.236***	8.059***	6.659***	5.258***	5.433***
2nd generation					
White	2.530***	2.176**	2.074**	2.141*	2.146*
Asian	5.979***	5.114***	4.450**	3.127*	3.218*
Mexican	0.593*	2.542***	2.276**	2.171**	2.257**
3rd plus generation					
White	–	–	–	–	–
Black	0.780†	1.778**	1.466*	1.150	1.147
American Indian/Alaska Native	0.488***	0.901	0.865	0.797	0.980
Asian	1.283	0.803	0.800	1.062	1.066
Mexican	0.738	1.365	1.225	1.301	1.342
Other Hispanic	0.943	1.377	1.370	1.582†	1.630†
Puerto Rican	0.889	2.528*	2.670*	2.808*	2.999*
1.5 generation schooled outside U.S.	0.729	0.807	0.819	0.616	0.633
Female	1.233**	1.497***	1.548***	1.398***	1.399***
SES index measure		1.175***	1.143***	1.114***	1.113***
Parents' School Expectations/Valuation					
Child to continue education after high school			2.707***	1.774***	1.776***
College savings			1.476***	1.288*	1.285*
Talk to child about school (index: 0-3)			1.317***	1.238**	1.232**
Student's Educational Expectations (10th grade)					
High school or less				–	–
Two-year or vocational college				2.919***	2.927***
Four-year college or higher				9.177***	9.191***
Limited English proficiency					0.599*
Intercept	3.268***	3.556***	0.636*	0.288***	0.292***
Model Fit Statistics (Average)					
AIC	10534.880	8722.870	8419.540	7682.920	7676.820
-2 log-likelihood	10500.880	8686.870	8377.540	7636.920	7628.820
Degrees of freedom	17	18	21	23	24
Log likelihood ratio test		1814.010***	309.330***	740.620***	8.100**
Additional degrees of freedom		1	3	2	1

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Yet, the key conditions of the second-generation advantage according to the optimism hypothesis do not universally account for the generational differences among all ethnic groups. For instance, the second-generation advantage among whites and immigrant advantage for other Hispanics and newly arriving blacks remain independent of student's own educational aspirations. There is evidence, however, that student's expectations partially mediate the benefits of having a foreign-born parent among other Hispanics. Because sample size limitations prevent us from accurately differentiating between other Hispanics of the 1.5 and second generations, it is unknown which generation is driving these differences. The same diminished magnitude is not found for recent black immigrants net of parental and student expectations, although the advantage among long-term blacks residents over native whites net of family background is reduced to non-significance.

Thus, results for this analysis show that student's beliefs about college attendance during adolescence – influenced in part by parents' expectations – have important consequences for future academic outcomes and in a manner partially consistent with the immigrant optimism hypothesis. Specifically, parents' socioeconomic status and expectations for their children's educational future measured in the eighth grade have appreciable impacts on the likelihood that their son or daughter attends any type of college both directly and indirectly through student's own educational expectations. For Asian and white students, where the second-generation edge pattern for any college enrollment was most vivid, only the generational advantage among Asians was mediated by parental and student expectations. Among Mexican immigrants, whose parents' modest socioeconomic backgrounds mask their second-generation acceleration, parental expectations capture much of the within group differences with student's own aspirations accounting for the rest.[36] While parental and student expectations account for much elevated achievement of the second-generation net of family background, differences continue to persist.

[36] Socioeconomic resources similarly constrain college-going among long-term resident blacks, who otherwise have likelihoods of postsecondary enrollment greater than their white peers and for which is accounted for by student's own high educational expectations.

To determine whether mastery of the English language explains differences in the educational attainment among the 1.5 generation, Model 5 adds student's LEP status into model equation. Although significantly reducing the odds of attending postsecondary schooling by roughly 40 percent, LEP does not explain generational differences net of family resources and parental and student expectations. In fact, the generational relationships both relative to third generation whites (Table 4.4) and within racial/ethnic groups (Table 4.5) remain unaffected.

4.5. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Any Postsecondary Enrollment

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
White generation 1.5 - generation 2	-0.497	-0.074	-0.165	-0.318	-0.276
White generation 1.5 - generation 3	2.033	2.102	1.909	1.823	1.870
White generation 2 - generation 3	2.530***	2.176**	2.074**	2.141*	2.146*
Black generation 1.5 & 2 - generation 3	9.322**	16.885**	14.534**	15.406*	15.279*
Asian generation 1.5 - generation 2	-3.746	-2.034	-1.412	-0.609	-0.541
Asian generation 1.5 - generation 3	0.950	2.277	2.238	1.456	1.611
Asian generation 2 - generation 3	4.696**	4.311**	3.650**	2.065†	2.152†
Mexican generation 1.5 - generation 2	-0.212	-0.210	-0.415	0.202	0.317
Mexican generation 1.5 - generation 3	-0.357†	0.967	0.636	1.072	1.232
Mexican generation 2 - generation 3	-0.145	1.177*	1.051†	0.870	0.915
Other Hispanic generation 1.5 & 2 - generation 3	2.293***	6.682***	5.289***	3.676**	3.803*

† p<.10, *p<.05, **p<.01, ***p<.001

In sum, results for any postsecondary enrollment are mixed for the straight-line and immigrant optimism theories. Findings fail to substantiate the successive upward generational pattern described by conventional assimilation theory (Equation 4.1), although family background is a significant predictor of future college-going behavior and accounts for the attainment disadvantage of recent newcomers from Mexico and indigenous American Indians (Equation 4.2 and 4.3). Interestingly for Mexicans, the inclusion of SES background reverses the net disadvantage into a positive effect for the 1.5 and second generations relative to native-whites and intra-ethnic second-generation advantage. These results suggest that for Mexicans, socioeconomic resources are a

substantial barrier for entry into postsecondary education and who otherwise exhibit the same second-generation boost observed among Asians and ethnic whites.

The pattern of results, however, is most consistent with the optimism hypothesis yet the body of evidence is far from conclusive. For instance, a pattern of second-generation advantage is observed among Asians and ethnic whites (Equation 4.4) as well as Mexicans net of family background, although the 1.5 generation does not significantly underachieve. Furthermore, confirming a large body of research, parental and student expectations for educational attainment in early childhood significantly predict long-term educational outcomes with parental beliefs having both a direct effect on college-going and indirect effect through their child's aspirations (Equation 4.5). Moreover, the inclusion of family expectations accounts for the second-generation advantage among Mexicans and Asians, although their advantage over native white remains significant (Equation 4.7). Expectations for future educational attainment does not, on the other hand, account for the boost among ethnic whites or the benefit of having foreign-born parent for other Hispanics and ethnic blacks. Similarly, student's LEP status (Equations 4.8 and 4.9) is not found to account for generational differences among ethnic groups perhaps because all three generational groups spent most (i.e., 1.5 generation), if not all (2^{nd} and 3^{rd} plus generations), of their lives in the United States.

Four-Year College Enrollment

Nested models investigating the conventional assimilation paradigm and optimism hypothesis for four-year college attendance are shown in Table 4.6. Results in the base model (Model 1) for the more selective enrollment to a four-year college shows a greater range of variation between ethno-generational groups than for any postsecondary attendance, controlling for socio-demographic characteristics. For instance, the selectivity of immigrant newcomers relative to native-whites continues to show an advantaged position among $1.5/2^{nd}$ generation blacks (2.664 times greater

odds) and disadvantage for 1.5 generation Mexicans (odds of 0.146 or roughly 85 percent less likely to attend four year college). On the other hand, other (non-Mexican) Hispanics of foreign parentage are now only marginally more likely to attend than are third generation whites at the $p < .10$ level, but are joined by foreign-born whites and Asians. Likewise, differences among long-term residents are more pronounced as well where all ethnic minorities (blacks, American Indians, Mexicans, other Hispanics, and Puerto Ricans) except Asians are between 40 and 75 percent less likely to attend a four-year institution than are their white peers.

Yet, as before for any college, a second-generation advantage in four-year enrollment is evident for Asians and ethnic whites relative to third plus generation whites (Equation 4.4). Intra-ethnic differences in the odds coefficients in Table 4.7 further highlight the advantage of recent immigrants relative to their long-term peers. For instance, the odds ratio of four-year college going for second generation Asians exceeds their third generation equivalents by 2.062 which is 3.657 times greater, although this difference is likely inflated as rates for three-plus generation Asians are generally undersized. Foreign-born Asians are also found to have a greater likelihood of four-year college enrollment than those of the third generation (difference in the odds ratios of 1.111 which is 2.433 times greater) as are blacks and other Hispanics with foreign-born parents relative to their three-plus generation ethnic complements.

Interestingly, Table 4.6 reveals that Mexicans have an upwardly mobile generational pattern in agreement with Equation 4.1 of the conventional assimilation theory relative to native-born whites where their lesser likelihood of four-year college attendance diminishes from 85%, 62%, and 54% for the 1.5 through third and higher generations respectively. Although a similar pattern emerges for any postsecondary enrollment, the generational trajectory for four-year college is more clearly defined and statistically significant for each of the three generational status measures relative to the native whites. Moreover, intra-ethnic differences in Table 4.7 (Model 1) show the second and three-plus generations have odds significantly greater than that of the 1.5 generation. The improving odds of four-year college enrollment between generations is

consistent with Smith's (2003) findings that successive Latin American and Mexican generations are making substantial progress in closing the educational gap with native whites. In sum, immigrants of Mexican descent show steady improvement across generations despite starting with educational levels well below the native U.S. population.

Consistent with conventional assimilation theory, the addition of family SES in Model 2 attenuates and, in some cases, completely accounts for the generational gaps in the odds of four-year college between and within ethnic groups (Equations 4.2 and 4.3). For instance, relative to the majority population in Table 4.6, the educational advantage for second generation whites and disadvantage for third generation blacks and other Hispanics, Mexicans, and Puerto Ricans is mitigated once family background is taken into account. For second generation Asians, although their greater odds of attendance remain significantly higher than that of whites, their advantage declines by 30 percent (odds ratio of 2.838 to 1.967). Three-plus generation Asians, however, are now significantly less likely to attend four-year schools than their white counterparts; potentially a consequence of the suspect educational levels found for third generation Asians. American Indians experience a lessening educational disadvantage of more than 50 percent relative to whites, net of family resources. Still, a select few ethno-generational groups in Model 2, which includes blacks and other Hispanics with foreign-born parents, 1.5 generation Asians, and second generation Mexicans, actually gain an advantage or further their existing advantage over third-plus generation whites suggesting that factors other than family resources matter for educational attainment.

Table 4.6. Logistic Regression Predicting Four-Year College Enrollment (Odds Ratio)

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
Ethno-Generational Status					
1.5 generation					
White	1.852†	1.680	1.668	1.702	1.711
Black - 1.5/2nd generation	2.664**	4.128**	3.440**	2.812*	2.813*
Asian	1.887†	2.436*	2.576*	2.515**	2.550**
Mexican	0.146***	0.811	0.681	0.903	0.921
Other Hispanic - 1.5/2nd generation	1.675†	3.103*	2.771*	2.086	2.099
2nd generation					
White	1.572**	1.339	1.327	1.310	1.310
Asian	2.838***	1.967*	1.946*	1.317	1.319
Mexican	0.384***	1.498*	1.387	1.439†	1.446†
3rd plus generation					
White	—	—	—	—	—
Black	0.618***	1.216	1.054	0.905	0.905
American Indian/Alaska Native	0.266***	0.406***	0.371***	0.363***	0.387**
Asian	0.776	0.486**	0.483**	0.621*	0.621*
Mexican	0.457***	0.752	0.690†	0.660†	0.662†
Other Hispanic	0.599*	0.709	0.719	0.796	0.799
Puerto Rican	0.545*	1.260	1.278	1.350	1.383
1.5 generation schooled outside U.S.	1.361	1.852*	1.907*	1.437	1.447
Female	1.044	1.201**	1.214**	1.038	1.038
SES index measure		1.162***	1.140***	1.110***	1.110***
Parents' School Expectations/Valuation					
Child to continue education after high school			3.610***	2.211**	2.210**
College savings			1.204*	1.042	1.041
Talk to child about school (index: 0-3)			1.322***	1.222**	1.221**
Student's Educational Expectations (10th grade)					
High school or less				—	—
Two-year or vocational college				3.005***	3.006***
Four-year college or higher				13.625***	13.622***
Limited English proficiency					0.867
Intercept	1.174**	0.979	0.139***	0.047***	0.047***
Model Fit Statistics (Average)					
AIC	13728.780	11503.220	11227.960	9969.360	9970.830
-2 log-likelihood	13694.780	11467.220	11185.960	9923.360	9922.830
Degrees of freedom	17	18	21	23	24
Log likelihood ratio test		2227.560***	281.260***	1262.600***	0.530
Additional degrees of freedom		1	3	2	1

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

The intra-ethnic generational differences in Table 4.7 Model 2 suggest a similar story; family background accounts for some of the variation within ethnic groups and accentuates differences amongst others. Specifically, prior generational differences among ethnic whites and Mexicans in the base model are no longer statistically significant net of family resources. Second generation Mexicans are an exception, however, as controls for SES status reveal a pattern of second-generational advantage with odds 1.91 times greater than the third generation; an occurrence also observed for any postsecondary enrollment. It is plausible, given Mexican immigrants low education levels upon arrival, that educational assimilation of Mexicans by the second generation is accompanied by increased aspirations for educational mobility yet actual attainment is stifled due to limited financial resources.

For immigrants of Asian origins, who tend to immigrate from regions with more developed educational infrastructures and arrive with already high educational expectations (Kao 1995), controlling for family background accentuates their odds advantage more broadly across new generations. That is, the respective 1.5 and second generation advantages over their third generation Asian peers (also relative to native whites) is heightened as the differences in the odds ratio coefficients increase by roughly 10% between the second and third generations (3.657 to 4.048 times greater) and 106% between the 1.5 and third generations (2.433 to 5.012 times greater). The dramatic upswing for 1.5 generation Asians suggests that the availability of resources may serve as a barrier to attending a four-year college. A similar increase in the generational gap is observed between other Hispanic immigrants of foreign-parentage and those of native-born parents, while the difference among black generations reduces slightly. In sum, family background does capture a significant amount of the variation in four-year college attendance, yet several ethnic and generational differences remain, especially the advantages of the second generation.

Models 3-5 investigate whether observed patterns of a second-generation advantage in four-year enrollment among Asians and Mexicans (Equation 4.4) are accounted for by parental expectations, student aspirations, and limited English

proficiency as the optimism hypothesis theorizes (Equation 4.7 – 4.9). Overall, modest support is found for the optimism approach to explaining the second-generation advantage. First, results from Model 3 show parental expectations have an independent effect on the likelihood of students to attend a four-year college. For instance, students whose parents highly value education – expect schooling beyond high school, have college saving, and regularly talk to their child about their education – have odds of attending any type of college after high school 10 times greater than students whose parents do not value education, all things being equal. Parents' expectations, however, have a minimal impact on the differences between and within ethno-generational groups, accounting only for the gap between second generation Mexicans and the majority white population.

Table 4.7. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Four-Year College Enrollment

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
White generation 1.5 - generation 2	0.280	0.341	0.341	0.392	0.401
White generation 1.5 - generation 3	1.852†	1.680	1.668	1.702	1.711
White generation 2 - generation 3	1.572**	1.339	1.327	1.310	1.310
Black generation 1.5 & 2 - generation 3	2.046***	2.912*	2.386*	1.907*	1.908*
Asian generation 1.5 - generation 2	-0.951	0.469	0.630	1.198	1.231
Asian generation 1.5 - generation 3	1.111*	1.950***	2.093***	1.894***	1.929***
Asian generation 2 - generation 3	2.062***	1.481***	1.463***	0.696*	0.698*
Mexican generation 1.5 - generation 2	-0.238**	-0.687	-0.706†	-0.536	-0.525
Mexican generation 1.5 - generation 3	-0.311***	0.059	-0.009	0.243	0.259
Mexican generation 2 - generation 3	-0.073	0.746**	0.697**	0.779**	0.784**
Other Hispanic generation 1.5 & 2 - generation 3	1.076**	2.394**	2.052*	1.290	1.300

† p<.10, *p<.05, **p<.01, ***p<.001

Second, as Model 4 shows, student's expectations regarding their educational future play a central role in their four-year college-going behavior. The effect of students' aspirations draws heavily from their parents as the magnitude of family background and parental expectations effects lessen with college savings no longer having a significant effect. As we would expect, students who expect at minimum to

attend a four-year postsecondary program are, at nearly 14 times the odds, considerably more likely to attend a four-year institution than students who expect to attain a high school education or less. Students who expected a two-year college are 3 times as likely as students who have no postsecondary aspirations.

Central to the optimism hypothesis that expectations are key mechanism for educational achievement, student's expectations also mediate part of the observed differences between socio-demographic groups and, in particular, the non-linear pattern of the second-generation edge (Equation 4.7). For ethno-generational groups relative to third-and-higher generation whites in Table 4.6, second generation Asians and other Hispanics with foreign parentage fail to meet the criteria for statistical significance once student expectations are taken into account. The odds of four-year college enrollment for third generation Asians, discussed throughout this chapter as having atypical education levels in the NELS data, remains significantly lower than their white counterparts (by 38 percent) even after controlling for parental and student expectations. Again, readers should interpret results for third generation Asian youth with caution. Finally, the greater odds of four-year college going among women and 1.5-generation immigrants schooled outside the U.S., net of family background, are no longer statistically significant.

Table 4.7 offers a clearer picture of the generational disparities within ethnic groups. The introduction of students' expectations into the model equation explains away the differences between other (non-Mexican) Hispanics of foreign and native parentage. Furthermore, although the greater odds observed among blacks with foreign-born parents, 1.5 and second generation Asians, and second generation Mexicans remain significant, the differences are noticeably reduced. For instance, among Asians, the respective 1.5 and second generation advantages over their third generation peers lessened from Model 3 to 4 as the difference in the odds decreases by roughly 47% between the second and third generations (4.028 to 2.120 times greater) and 24% between the 1.5 and third generations (5.332 to 4.049 times greater). These differences are not explained by students' LEP status in Model 5, which has no discernible direct or

indirect effect on four-year college going behavior (Equation 4.8. and 4.9). Thus, while variables for the optimism hypothesis explain some the second-generation advantage, significant gaps persist.

Bachelor's Degree or Higher

Table 4.8 shows the results of binary logistic regression models predicting bachelor's degree attainment or higher under conditions of the conventional and optimism theories of immigrant assimilation. The first model controls for socio-demographic factors and shows that whites and Asians of both the 1.5 and the second generation are significantly more likely to attain a bachelor's degree than third generation whites—a trend consistent in the base model for four-year college attendance. Specifically, for whites of foreign parentage the odds of college completion nearly twice as high as three-plus generation whites whereas 1.5 generation Asians are 2 times higher and more than 3 times as large for second generation Asians. Results also show that Mexicans are, as in the preceding logistic models, significantly less likely than the majority population to earn a four-year degree or above yet show a pattern of second-generation edge with base line odds of 0.109, 0.313 and 0.225 times that of the third generation whites for the 1.5 through three-plus generations, respectively. Long-term residents, such as third plus generation blacks, American Indians, and Puerto Ricans, are similarly less likely to finish a baccalaureate degree than their white peers. Gender differences are also observed wherein women are 28% percent more likely than their male counterparts to complete a four-year degree. The coefficient for 1.5 generation immigrants receiving some of their early education outside the U.S. is not significant.

Differences in the odds ratios within racial/ethnic groups are shown in Table 4.9. Once more, Asians and whites (noted above) of both the 1.5 and the second generation have, respectively, significantly greater odds than their long-term resident peers. Among Asians and despite anomalous rates for the third generation, the difference in

the odds of graduating college for the 1.5 generation and second-generation are 2.574 and 4.771 times greater than the odds for third and higher generations. Likewise, the respective gaps among whites for the 1.5 and second generations relative to the three-plus generation are 1.974 and 1.816 times greater. Although the generational trajectory of Mexicans appears consistent with a second-generation advantage, only the difference in the odds between the second and 1.5 generation are significant with odds are 2.872 times greater for the second generation. The differences between the odds for the 1.5 and third generations are marginally significant at the $p < 0.10$ level and not significant for the second and third generations.

The next model in Table 4.8 (Model 2) adds student's family background, which has positive impact on attaining a bachelor's degree, increasing the odds by roughly 17 percent for every unit increase in the SES index. As before, primary schooling outside the U.S. for 1.5 generation immigrants is associated with greater odds of college completion (80 percent more likely), controlling for disparities in family background. Gender remains a significant factor where women are 1.546 times as likely as are men to receive a four-year degree.

Results show mixed support for the conventional assimilation model with respect to attaining bachelor's degree (Equation 4.2). Across ethno-generational groups, family background explains the lesser odds of completing a four-year degree relative to third generation whites for third generation blacks, 1.5 and second generation Mexicans, and Puerto Ricans. Only in the case of 1.5-generation whites is an odds advantage accounted for by socioeconomic status. Unexpectedly, however, third generation Asians and other Hispanics of foreign parentage, who were originally at parity with third generation whites, show an odds disadvantage for Asians and advantage for other Hispanics relative native-born whites, net of family background. These divergent results suggest that ethno-generational groups vary in their reliance of socioeconomic resources for achieving educational mobility. In the case of three-plus Asians, however, data integrity due small subgroup sample size remains a concern.

Table 4.8. Logistic Regression Predicting Bachelor's Degree Completion or Higher (Odds Ratio)

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
Ethno-Generational Status					
1.5 generation					
White	1.974*	1.493	1.690	1.715	1.705
Black - 1.5/2nd generation	0.944	1.131	0.948	0.758	0.757
Asian	1.740*	2.001*	2.034*	2.094***	2.263***
Mexican	0.109***	0.735	0.624	0.918	1.013
Other Hispanic - 1.5/2nd generation	1.272	1.993*	1.895*	1.442	1.486
2nd generation					
White	1.816***	1.611***	1.605**	1.614**	1.611**
Asian	3.225***	2.176**	2.128**	1.593*	1.601*
Mexican	0.313***	1.316	1.261	1.376	1.387
3rd plus generation					
White	—	—	—	—	—
Black	0.430***	0.797	0.717†	0.673*	0.672*
American Indian/Alaska Native	0.222***	0.367**	0.333***	0.333***	0.511†
Asian	0.676	0.424***	0.423***	0.550*	0.549*
Mexican	0.225***	0.362***	0.336***	0.307***	0.309***
Other Hispanic	0.617	0.724	0.734	0.878	0.879
Puerto Rican	0.302**	0.609	0.620	0.578	0.613
1.5 generation schooled outside U.S.	1.207	1.814*	1.890*	1.475	1.532
Female	1.276***	1.546***	1.567***	1.407***	1.410***
SES index measure		1.168***	1.149***	1.118***	1.117***
Parents' School Expectations/Valuation					
Child to continue education after high school			5.612***	3.318***	3.307***
College savings			1.336***	1.186*	1.183*
Talk to child about school (index: 0-3)			1.148†	1.042	1.042
Student's Educational Expectations (10th grade)					
High school or less				—	—
Two-year or vocational college				5.067***	5.086***
Four-year college or higher				30.033***	30.103***
Limited English proficiency					0.392**
Intercept	0.458***	0.296***	0.036***	0.005***	0.005***
Model Fit Statistics (Average)					
AIC	12176.440	10142.480	9944.070	8896.890	8887.450
-2 log-likelihood	12142.440	10106.480	9902.070	8850.890	8839.450
Degrees of freedom	17	18	21	23	24
Log likelihood ratio test		2035.960***	204.410***	1051.180***	11.440***
Additional degrees of freedom		1	3	2	1

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Differences in the odds coefficients within ethnic groups in Table 4.9 reveals minimal narrowing between generations with only the gap between 1.5 and third generation whites no longer significantly different. To the contrary and consistent in all three logistic models, second-generation Mexicans have odds significantly greater than the third plus generation net of family SES. This finding suggests that among Mexicans, immigrant parents' poor socioeconomic backgrounds inhibit their native-born children's educational mobility; a group who would otherwise be exceeding the educational attainment of their third generation peers. In other words, family background overshadows the emergence of second-generation advantage for immigrants arriving from Mexico. Significant differences are similarly accentuated between other (non-Mexican) Hispanics of foreign and native parentage, although whether the 1.5 or second generation or both drives this difference is unknown.

We next turn to whether the second-generation advantage observed among ethnic whites, Asians, and Mexicans is accounted for by measures of the optimism hypothesis (Equations 4.7 – 4.9). The third model in Table 4.8 introduces the set of variables for parents' educational expectations for their child, which are significant (child continuing school and college savings) and jointly increase the likelihood of completing a bachelor's degree by as much as 7.499 times. This means that the predicted probability of finishing a four-year degree for a white third generation male youth whose parents have no educational expectations is 0.03 compared to 0.21 for parents who highly value education. Despite the importance of parental expectations, generational differences between and within racial/ethnic groups remains statistically unchanged from model two to three. The diminished direct effect of parental expectations on their child's long-range educational attainment is consistent with early status attainment research which found family influences wane as children get older (Blau and Duncan 1967, pg. 403). Instead, social origins are thought to work indirectly through children's learned expectations and achievements.

Table 4.9. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Bachelor's Degree Completion or Higher

	Base Model	Conventional Assimilation	Optimism Hypothesis		
	I	II	III	IV	V
White generation 1.5 - generation 2	0.158	-0.118	0.085	0.101	0.094
White generation 1.5 - generation 3	1.974*	1.493	1.690	1.715	1.705
White generation 2 - generation 3	1.816***	1.611***	1.605**	1.614**	1.611**
Black generation 1.5 & 2 - generation 3	0.514†	0.334	0.231	0.085	0.085
Asian generation 1.5 - generation 2	-1.485†	-0.175	-0.094	0.501	0.662
Asian generation 1.5 - generation 3	1.064**	1.577***	1.611***	1.544***	1.714***
Asian generation 2 - generation 3	2.549***	1.752***	1.705***	1.043**	1.052**
Mexican generation 1.5 - generation 2	-0.204*	-0.581	-0.637	-0.458	-0.374
Mexican generation 1.5 - generation 3	-0.116†	0.373†	0.288	0.611*	0.704*
Mexican generation 2 - generation 3	0.088	0.954***	0.925***	1.069***	1.078***
Other Hispanic generation 1.5 & 2 - generation 3	0.655†	1.269*	1.161*	0.564	0.607

† p<.10, *p<.05, **p<.01, ***p<.001

As such, students' expectations, included in Model 4, have a significant and substantial effect on college completion and account for much of the influence of family background, and parental expectations. Specifically, students who expected to attend a four-year college in tenth grade are 30 times as likely to earn a BA degree as students who anticipated a high school degree or less, all else equal. Comparatively, students who expected a 2-year postsecondary experience in their sophomore year of high school are only 5 times as likely as the reference group. As in the other logistic models, parental effects, although mediated by students' expectations, continue to have independent impact (combined parental effects ≤ 3.935 times greater odds). Family's socioeconomic background also continues to have a direct effect on educational attainment. The gender difference also persists, yet the effect for 1.5-generation immigrants schooled outside the U.S. before eighth grade is no longer significant.

Results show, in contrast to the optimism hypothesis, that student's expectations account for few of the generational differences observed between and within ethnic groups. In fact, only other Hispanics of foreign parentage are no longer statistically significant relative to third generation whites and other Hispanics of native-born parents. The second-generation edge found among ethnic whites and Mexicans relative to the third generation in Table 4.9 continue to be significant, and even slightly widen

for Mexicans—expanding from 3.753 times greater to 4.482 times greater in the fourth model. Notably, 1.5-generation Mexican immigrants have significantly a greater likelihood (2.990 times) of attaining a bachelor's degree than their third generation counterparts, net of students' expectations. The advantage among Asians of both the 1.5 and second generation relative to long-term residents does appear to narrow slightly, but the differences remain statistically significantly. The addition of students' LEP status in Model 5 does not account for either inter- or intra-ethnic differences. Thus, results show little support for the optimism theory in explaining generational differences, particularly the overachievement of the second generation.

Conclusion

While previous research has treated the three primary theories of immigrant incorporation as oppositional, this chapter tested a reduced-form model that reconciles the conventional assimilation and optimism hypothesis for explaining generational status differences in postsecondary educational attainment. Specifically, this analysis examined the role of socioeconomic background (conventional assimilation) and family expectations (optimism hypothesis) on educational outcomes following high school for youth from different racial/ethnic and generational status backgrounds. Across a series of "nested" models, I evaluated whether family background, parental and student expectations, and limited English proficiency are able to account for generational differences in educational attainment. To carry out this analysis, I took advantage of rich panel data contained in the NELS and estimated separate logistic regression models to predict three successive levels of postsecondary educational attainment (attending any college; attending four-year college; attaining a bachelor's degree or higher) from family background and school expectations measured 10 and 12 years earlier. Results of the analysis reveal a number of ways in which 1.5 and second generation immigrants differ from their long-term resident counterparts, yet support for the conventional model or optimism hypothesis is far from certain under this parsimonious specification.

In general, findings confirm the diversity of patterns of generational incorporation as measured along different levels of postsecondary attainment. At an aggregate level, immigrant youth are more likely than their third generation counterparts to have attended some form of postsecondary schooling and earned their bachelor's degree by age 26. The magnitudes of these gaps are somewhat small with most differences no greater than 5 percentage points. Moreover, while generational differences are suggestive of second-generation advantage for any college attendance and four-year college completion, the narrow range of disparities and uncertainty in the estimates (standard errors) hinder clear interpretations. Thus, at this broad level, it would be easy to conclude that there are few differences to be explained between generations.

Disaggregating generational status by ethnic background, however, uncovers far more variability in educational outcomes and reveals commonly identified patterns of immigrant assimilation. For instance, Asians follow a distinct second-generational advantage relative to their 1.5 and third generation ethnic peers and native white youth for each of the three attainment measures. Among other groups, such as ethnic whites, blacks, and non-Mexican Hispanics, immigrant youth maintain a sizable advantage in educational attainment relative to their more established counterparts. Youth of Mexican ancestry, on the other hand, have a mixed trajectory in which each generation appears to do better than the next as far as their likelihood of any college and four-year attendance despite beginning far below the U.S. population. In contrast to this upwardly mobile pattern, the differential pattern of Mexican immigrants for bachelor's degree completion follows a trajectory of second-generation advantage. These results argue strongly for the value of studying generational differences in educational incorporation explicitly by ethnic origins, although careful attention should be paid to results for subgroups with small sample sizes (see, for example, results for three-generation Asians).

Results for the logistic regressions show modest support for both conventional assimilation theory and optimism hypothesis, although neither theory is able to fully

account for differences between generations. Consistent with the conventional model, for instance, socioeconomic background is a key factor directly affecting the odds of college enrollment and graduation with a bachelor's degree and as a mediator of ethnic disadvantage. Generational differences in attainment relative to the native white population, however, remain largely intact net of controls for family background with the exception of youth of Mexican ancestry and historically disadvantaged minorities of third and later generations (e.g., blacks and Native Americans). Similarly, intra-ethnic differences are also unchanged in most cases with the exception of ethnic whites and 1.5 generation Mexicans relative to their long-term resident ethnic peers. Overall, results show that the mediating effect of family background on ethno-generational differences varies by attainment outcome with the greatest impact occurring for four-year college attendance. Given the substantial costs associated with attending a four-year institution, it is reasonable that parental resources have the greatest effect at this postsecondary transition. In sum, findings for the conventional model affirm that family background is directly associated with postsecondary attainment, but falls short of accounting for generational differences.

The pattern of results for the three models predicting immigrants' educational attainment is most consistent with the optimism hypothesis. Generational differences in the rates of educational attainment among ethnic groups clearly show that 1.5 and second generation students have a net advantage compared to their three-plus generation ethnic counterparts. This intra-ethnic ordering is in line with the theory's presumption of second-generation advantage pattern, which is observed cross-sectionally among ethnic whites, Asians, and Mexicans. For students of Mexican ancestry in particular, a second-generation edge pattern emerges only after family background is controlled, suggesting that capital resources play an important role in the postsecondary educational attainment for immigrants arriving from Mexico. Without controls for socioeconomic background, rates across generations among Mexican youth followed an upward trajectory described by the conventional theory.

Results also lend support for the theory's key mechanism of family expectations (parents and child) which are found to directly affect the likelihood of college going and completion. Student's own educational aspirations, which had the greatest impact on their educational outcomes, mediate much of the effect of parents' expectations signifying that children may in fact "inherit" their parents' outlook for social mobility as the theory predicts. Regression results indicate, moreover, that parental and student expectations do explain some immigrant differences for certain intra-ethnic comparisons and educational outcomes. In the any college models, for instance, parental expectations mediate the second-generation advantage among Mexicans while the addition of student expectations accounted for the gap between second and three-plus generation Asian youth. Yet, family expectations fail to attenuate the second-generation edge for any college attendance for whites, Asians, and Mexicans relative to the majority white population. Overall, results show that the ability of expectations to mediate generational differences diminishes across increasingly restrictive levels of educational attainment. In fact, while only modest narrowing of ethnic and generational differences is observed in the four-year enrollment model, results for bachelor's degree completion failed to show an association between expectations and the second-generation advantage. Taken together, the pattern of generational differences and the sequence of casual relationships, although consistent with the optimism hypothesis, fail to account for the ethnic differences including the second-generation advantage pattern. Findings thus suggest that factors other than aspirations alone enable immigrants to overcome each successive educational hurdle.

On balance, there is fairly convincing evidence that disparities by immigrant status and the advantage of the second generation are not merely the result of differences in family background and expectations for educational mobility. Although the mediation and the narrowing of gaps between ethnic and immigrant status groups offers modest support for the conventional and optimism models for explaining immigrant incorporation, generational differences largely remain across the three models of educational attainment. Further, the varying effect of family background and

expectations to account for generational differences by ethnic group is consistent with a segmented or ethnically conditional theory of adaptation to American society (Portes and Zhou 1993; Zhou 1997). Thus, a more complex model, such as the one illustrated in Figure 4.1, is needed to understand what mechanisms may influence these differences beyond those measured in this analysis. Measures of the contextual environment, such as family composition, school characteristics, and neighborhood makeup, in combination with broader indicators of human capital and parental involvement are all possible sources for explaining these persistent generational differences in educational attainment.

Chapter V: Contextualizing Immigrants' Educational Incorporation: A Test of the Segmented Assimilation Theory and Beyond

As a heuristic to guide in the development of theoretical models, parsimony is a preference for the least complex explanation for an observation. It is rare, however, that the simplest account is the best one, at least not over the long run. The difficulties that all scientists face, but social scientists in particular, are that the phenomena we seek to understand often occur within a muddled and complex environment that is difficult to control. Isolating intricate causal relationships requires quality data both in breadth and scope. Consequently, scholars tend to prefer the simplest explanation that is consistent with the data available at a given time.

However, as new and richer data have become available, once parsimonious explanations have yielded to more elaborate models. For social researchers, the increased availability of data matching individuals to their structural environment has enabled the inclusion of both individual- and contextual-level factors. In the study of social inequality and mobility, the ability to examine how structural constraints influence the process by which persons attain a certain position in society has produced fuller, more complete accounts of the status attainment process. Data on educational attainment offers one of the richest sources of multi-level information due to recent national data collection efforts and since schooling activities occur within hierarchical groups—learning groups within classrooms, classrooms within schools, schools within districts, and schools within communities (Coleman et al. 1966). Education, moreover, is an important locus of study as school achievement is itself a central mechanism for achieving social mobility (Blau and Duncan 1967; Featherman and Hauser 1978).

For understanding contemporary immigrant incorporation, the educational system is one of the first institutions immigrant children encounter and a central means through which they are able to realize their parents' dream of a better life. Yet, findings from Chapters 2 and 4 and substantiated elsewhere (Mare 1995; Vernez and Abrahamse 1996) reveal that trends in educational attainment vary considerably by generational

status and ethnic origin. For instance, newcomers from Asia and their descendants have attainment levels at or above the majority population (third plus generation non-Hispanic whites). Immigrants of Mexican ancestry, on the other hand, have attainment rates – particularly rates of college-going and four-year degree completion – considerably below those of native blacks who themselves are a historically disadvantaged group. Concerns that Mexicans will fail to assimilate to the American mainstream, however, are widely unfounded as successive generations show great educational improvements despite their humble origins upon arrival (Smith 2003). Meanwhile, immigrants of other ethnic backgrounds have attainment levels somewhere between these two extremes. To the extent that immigrants arrive at different starting points, virtually all groups show improvement from the first to the second generation.

While recent data collection efforts have greatly improved the ability of researchers to extrapolate generational trajectories among ethnic groups, the causes that underlie differential patterns of educational attainment have proven far more elusive. In the last Chapter, the conventional assimilation theory and optimism hypothesis – reconciled within a status attainment framework – were found to marginally explain generational gaps in postsecondary attainment using data from the National Educational Longitudinal Study (NELS). Specifically, the primary mechanism of the conventional model, family socioeconomic background, accounted for few generational differences among ethnic groups, with much of the gaps explained among the most established groups of the third and higher generations. As for the optimism theory, which seeks to explain the super-achievement of second-generation immigrant, only minimal support was found for parental and student expectations in mediating the non-linear generational trends among ethnic groups (i.e., ethnic whites, Asians, and Mexicans). Although these key individual-level covariates are significant factors for predicting educational attainment, remaining disparities between ethno-generational groups indicate such explanatory models are incomplete.

To explain these persistent generational gaps in educational attainment, this analysis extends the reconciled model of immigrant incorporation outlined in Chapter 3

and partially tested in Chapter 4 to evaluate the mechanisms that underscore the segmented assimilation theory. The segmented assimilation theory, according to Portes and Zhou (1993), emphasizes the contextual environment as a central factor for channeling trajectories of generational incorporation as well as parents' agency for guarding against their children's downward assimilation. This contextualization highlights important distinctions among immigrant groups that have generally gone untested empirically and that have important implications for understanding the immigrant experience.

Moreover, this analysis goes beyond simply appealing to the tenets of segmented assimilation theory as a suggested explanation for generational disparities in attainment. Instead, the proposed reconciled model controls for nativity and ethnic composition (and generational status within ethnic groups), while directly testing the theory's main propositions. Specifically, I examine the possibility that the contextual environment during students' adolescent years and parental expectations and involvement (and protective influences) account for generational differences in later educational attainment. Following the proposed reconciled model, I then evaluate whether these factors operate through students' own educational expectations to predict postsecondary educational attainment several years after high school. Finally, I investigate the fully specified model of immigrants' educational attainment by including broader indicators of human capital, such as student's prior achievement and cognitive ability.

Integrated Assimilation Model: Revisited

Figure 5.1 illustrates the now familiar fully reconciled model of immigrant educational attainment. Seeking to bridge the chasm between theorizing and empiricising immigrant adaptation to American society, the proposed integrated model provides a framework for synthesizing three popular assimilation perspectives—straight-line assimilation, immigrant optimism hypothesis, and segmented assimilation

theory—by unifying them within a status attainment perspective. By blending the assimilation theories within a common theoretical model, we are able to better understand how the central mechanisms of each theory function together to explain generational differences in students' postsecondary outcomes.

In addition to providing a coherent framework for coordinating these theories, the status attainment model is adaptable to the complexities of contemporary assimilation theories. Specifically, the status attainment model offers a platform for investigating two types of explanations that may account for disparities in educational attainment between immigrant and native-born youth from various racial and ethnic groups: (1) individual-level explanations and (2) explanations based on the contextual environment that serve to either facilitate or hinder educational success. Individual level explanations, explored in the previous chapter under the conventional assimilation and optimism hypothesis theories (sold-circle and dashed-boxes in Figure 5.1 respectively), are based on the capacities of ethnic group members to attain educational success. Although differences in socioeconomic background and expectations for school achievement were found to significantly predict postsecondary outcomes, substantial generational status differences between and within ethnic groups remain. Interestingly, for Mexican Americans, results reveal an almost identical pattern of second-generation mobility albeit at a much lower starting point controlling for their parents' modest background. The second-generation advantage among immigrants of European, Asian, and Mexican descent (net of family background) is only partially mediated by parental expectations and student's own aspiration, which are presumably inherited from their parents as predicted by the optimism hypothesis.

According to explanations arguing for the inclusion of contextual effects, adjustment for an individual's position in the social and economic hierarchies of American society should attenuate ethnic and generational differences by factoring out dissimilarities in reception and subsequent opportunities for educational attainment (Lieberson 1980; Portes and Rumbaut 2001). Distinguishing between individual and contextual effects is especially important for understanding how immigrant groups

respond to the structural environment and ultimately influence the trajectory of incorporation. The tenacity of newcomers to react to and, in certain cases, subvert environmental influences is a key component underlying the theory of segmented assimilation.

Segmented Assimilation Theory

The segmented assimilation perspective, identified by the solid-lined box in Figure 5.1 and includes the dashed-line boxes and oval for conventional and optimism theories, maintains that new arrivals and their descendants follow a pathway of upward or downward assimilation. An upward or conventional straight-line trajectory is predicted for immigrant groups with high levels of human capital (i.e., socioeconomic status) and who are received favorably by society. In contrast, immigrant groups who possess limited wealth and benefit from minimal community support are unlikely to achieve the economic stability necessary for upward mobility and consequently remain susceptible to a life of impoverishment for themselves and their children. Moreover, immigrant parents' limited economic opportunities may force them to take up residence in poor, inner-city neighborhoods where their children are more likely to attend poorly performing and under funded schools. Once enrolled in such disadvantaged schools, children may encounter an "adversarial culture" among students and teachers that discourages valuation of education and aspirations for upward mobility.

Given the susceptibility of disadvantaged immigrants to downward mobility, parents may adopt an approach of selective acculturation whereby they seek to advance their children's upward mobility by actively preserving or "protecting" traditional cultural values and limiting their absorption into American society. In this way, immigrant parents insulate their kids from negative influences by upholding strong ethnic ties and traditional cultural values, which may include restricting social interactions to those who are culturally and/or ethnically similar, limiting participation in activities common to American adolescents, and requiring the use of the native

language (spoken, written, and/or read). It is through this cultural maintenance that parents are able to regulate influences from significant others (i.e., peers, teachers, and other role models) on their children's socioeconomic achievement and indirect influences through their children's aspirations for upward mobility.

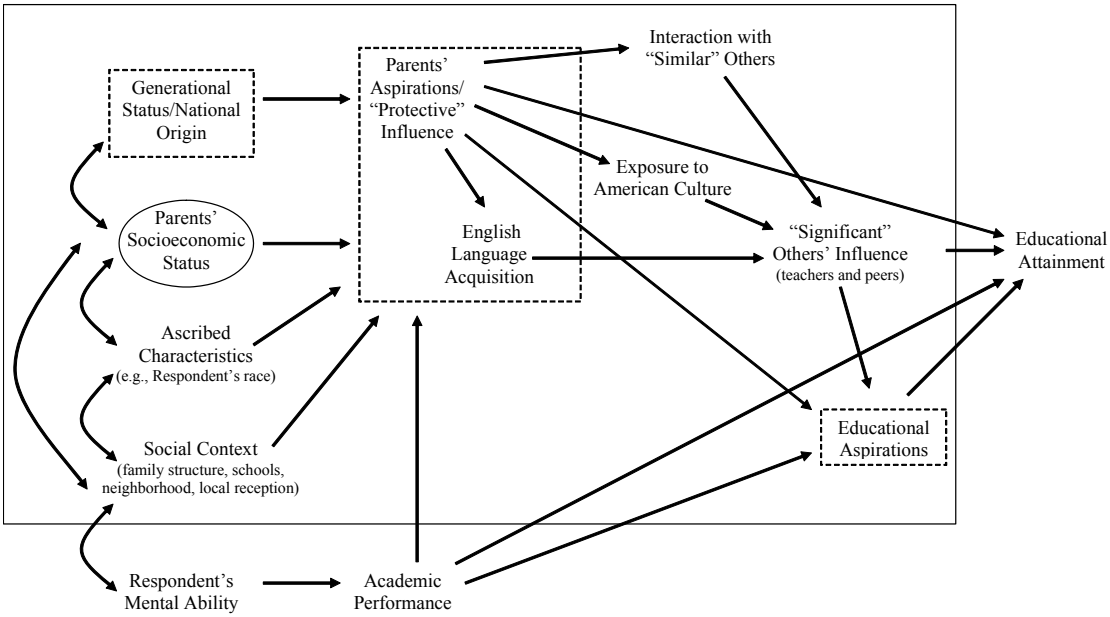


Figure 5.1. Fully Reconciled Model of Immigrant Assimilation

While Portes and Zhou's (1993) original formulation of the segmented assimilation theory emphasizes selective acculturation in unfavorable social contexts, there is no reason to believe that immigrant parents who live in high socioeconomic communities will not also seek to maintain their culture of origin. However, the effect of parents' protective influences on their children's educational achievement in an affluent environment is unclear. On the one hand, the preservation of immigrants' cultural heritage may enhance children's motivation for upward mobility, above and beyond their advantaged peers of native-born parents; a process akin to the optimism hypothesis. On the other hand, resource advantaged immigrant adolescents (those who have a middle or upper-class family background and live in a moderate to upscale neighborhood), who are pressed to adhere to the culture, values, and community

traditions of their parents, may achieve less success as an act of rebellion than if there was no undue pressure to uphold traditional ideals.[37] In considering the differential effect of selective acculturation in an advantaged versus disadvantaged context, Xie and Greenman (2005) conclude that retaining culture of origin among resource rich immigrant groups is unlikely to make a substantial difference in children's socioeconomic outcomes, thus making partial assimilation optional. For immigrant groups residing in low socioeconomic communities, selective acculturation may be essential for warding off downward assimilation into the underclass.

In sum, immigrants' assimilation trajectory, either upward or downward, results from variation in the socioeconomic resources groups can draw on at the time of their arrival, family structure, and the context of reception, which is itself contingent on geographic location of settlement, ascribed characteristics such race or skin color, national origin, and opportunities for mobility. In other words, the segmented assimilation paradigm suggests that generational differences in adolescents' outcomes depend on key qualities of the contextual environment. The exact relationships among these variables are complex and beyond the scope of this chapter. Here, it is sufficient to say that these contextual measures are regarded as predetermined variables.

From the segmented assimilation perspective, the following predictions are drawn in a temporal order consistent with Figure 5.1:

Hypothesis C1.1: In favorable communities, generation number is positively associated with socioeconomic achievement (i.e., upward assimilation). This propositional statement, identified as assimilation Pathway A, is represented by an interaction effect between generational status and positive contextual environment.

$$\left(\text{Educ}_{\text{Gen 1}} < \text{Educ}_{\text{Gen 2}} < \text{Educ}_{\text{Gen 3+}}\right) \text{ x Effect of Context} > 0 \qquad (5.1)$$

[37] This alternative response to upholding traditional values is rooted in the psychological reasons for teen rebellion, which is thought to stem from a desire to confirm to peer groups. For teenagers with low self-esteem, the desire to confirm is particularly strong as well as their tolerance for deviant behavior (Zimmerman et al. 1997). Applied to immigrant youth, in response to pressure to conform to traditional values in lieu of an Americanized lifestyle, teenagers may develop low self-esteem and thus are more susceptible to deviant behavior and lesser school achievement.

Hypothesis C1.2: In adverse communities, the association between immigrant generation and socioeconomic achievement is negative (i.e., downward assimilation). Mathematically, I express Pathway B as

$$\left(\text{Educ}_{\text{Gen 1}} > \text{Educ}_{\text{Gen 2}} > \text{Educ}_{\text{Gen 3+}}\right) \text{ x Effect of Context} < 0 \qquad (5.2)$$

Thus, hypotheses C1.1 and C1.2 reflect the interaction effect between generational status and socioeconomic context.

Hypothesis C1.3: In adverse communities, parents' protective influences mediate the negative association between their child's generation number and socioeconomic achievement (i.e., selective acculturation). Thus, the negative association between generation number and disadvantaged community environment is attenuated (i.e., less negative or ≤) when parents promote "staying ethnic". I represent Pathway C by the following equation

$$\left[\left(\text{Educ}_{\text{Gen 1}} \leq \text{Educ}_{\text{Gen 2}} \leq \text{Educ}_{\text{Gen 3+}}\right) \text{ x Effect of Context} < 0\right] \mid \text{Selective Acculturation} > 0 \qquad (5.3)$$

Because the segmented assimilation theory does not address whether selective acculturation benefits immigrant youth in an advantaged context, the present analysis makes no a priori predictions regarding this pathway.

Hypothesis C2.1: Mediating the effects of parents' protective influences for upward mobility, the influence of significant others on children's socioeconomic outcomes is *positive* given (|) an *advantaged* context (Pathway A) and when parents' protective influences are cast in response to a *disadvantaged* environment (Pathway C). This proposition is defined as

$$\text{Effect of Significant Others} > 0 \mid \text{Pathway A, Pathway C} \qquad (5.4)$$

Hypothesis C2.2: In adverse communities and *absent* parents' protective influences, significant others have a *negative* effect on students' socioeconomic achievement (Pathway B). Thus, I state this hypothesis as

$$\text{Effect of Significant Others} < 0 \mid \text{Pathway B} \tag{5.5}$$

Hypothesis C3.1: In an *advantaged* context or under selective acculturation, parental and child expectations for upward mobility positively affect achievement.[38]

$$\left(\text{Effect of Parents' Expect and Child's Expect}\right) > 0 \mid \text{Pathway A, Pathway C} \tag{5.6}$$

Hypothesis C3.2: In a *disadvantaged* context and *absent* of selective acculturation, parental and child expectations for upward mobility negatively affect achievement.

$$\left(\text{Effect of Parents' Expect and Child's Expect}\right) < 0 \mid \text{Pathway B} \tag{5.7}$$

If the assimilation process occurs in a manner similar to Figure 5.1, then influences from significant others mediate the effect of parental expectations on their child's aspirations for upward mobility. For instance, in the absence of selective acculturation in an unfavorable environment, the discouraging influences of significant others negatively affect achievement through children's own expectations for upward mobility. In an advantaged environment, children's positive expectations for upward mobility are partially explained by the supportive influences of significant others.

[38] Consistent with the immigrant Optimism Hypothesis, this hypothesis assumes that parents and child's aspirations for upward mobility positively affect socioeconomic achievement (Equations 4.5 and 4.6). As specified by the status attainment perspective and consistent with the optimism hypothesis, parents' aspirations for their child's upward mobility have a positive, direct effect on achievement as well as indirectly through student's aspirations for upward mobility.

Exploring Different Contextual Effects

Until this point, the precise context and what constitutes an advantageous or adverse environment for educational attainment has remained nondescript. This omission has been intentional as there is no agreed upon structural level that links the macro and micro dimensions of immigrant assimilation and educational achievement. In their study of labor market discrimination, for instance, Baron and Bielby (1980) pointed to the "firm" as the ideal intersection point between individuals and workplace organization and inequality. In the study of educational attainment, particularly the educational mobility of ethnic minorities, researchers have been less successful in reaching common ground.

One the first and most prominent studies to examine the micro and macro effects in education was James Coleman et al. 1966 study, *Equality of Educational Opportunity*. One of the many goals of the study was to decipher the effects of school and non-school factors on students' achievement in the primary and secondary grades. Coleman and associates found, to the surprise of many, that schools on average accounted for a relatively small fraction of the difference in student performance although a positive impact was observed for minority and socioeconomically disadvantaged groups. Instead, family background and in particular, family's socioeconomic background, and to a lesser extent, peers' aspirations accounted for much more of the variation in student outcomes.

With researchers and policymakers finding Coleman et al. (1966) conclusions both counterintuitive and controversial, an extensive body of literature examining the relationship between schools and student performance began to develop. Such studies have explored high-level differences between public and private schools (Hoffer, Greeley and Coleman 1985), the demographic composition within schools (Coleman, Hoffer and Kilgore 1982), differential impact of school and classroom size (Fowler Jr and Walberg 1991; Lee and Smith 1997; Nye, Hedges and Konstantopoulos 2000), effect of teacher quality on student outcomes (Goldhaber and Brewer 2000), and so

forth. Despite a large number of caveats, investigations tend to find that private schools perform better than public, small schools and classrooms score higher than larger ones, and teacher tenure and master's degrees are not good indicators of effective teachers.

Not to be out done by studies on schools, the impact of the family unit on the school achievement is also a well established field. In the era of Coleman et al. 1966 study, researchers such as Blau and Duncan (1967) and Duncan, Featherman, and Duncan (1974) wrote at length on factors in the home that determined educational outcomes such as parental background, aspirations, motivations, number of siblings, and child spacing. More recently, work by Lareau (1989, 2003) highlights the importance of parental involvement in their child's education and how parental engagement with teachers, guidance counselors, and other school officials varies by social class. An overarching theme of Lareau's research is how socioeconomic class shapes children's skills and the role parents play in cultivating such proficiencies. Although Lareau finds that social class, and not racial distinctions, relate to differences in parenting styles and children's performance in and out school, in other locales both the socioeconomic and racial and ethnic make-up influence school outcomes (Massey and Denton 1993).

In the modern U.S. public education system, local school districts are the primary source of school funding, relying on local property taxes, and have substantial authority over the allocation of resources to schools. Within a school district, students are typically placed into schools according to neighborhood followed by other decision criteria, including choice. However, a series of explicit and implicit policies (state and federal) have produced concentrations of low-income, predominately minority groups in particular neighborhoods, typically in central cities (Massey and Denton 1993). Spurred by the flight of mostly upper and middle-class whites, and the exodus of businesses, schools in such inner-city districts are faced with a reduced tax base and often higher costs per student than schools in districts in suburban areas. In addition, schools in predominately minority neighborhoods are also faced with the challenge of

attracting and keeping high quality teachers because resource-poor schools are more difficult teaching assignments (Lankford, Loeb and Wyckoff 2002).

The result is a concentration of disadvantage where neighborhoods and schools face greater challenges to creating an environment conducive to educational achievement than others. Research shows, net of school effects, that neighborhoods with wealthier residents in terms of income, education, and occupational prestige are associated with higher educational outcomes (Ainsworth 2002; Wilson 2001). Goldsmith (2009) found that concentrations of blacks and Latinos in schools coincided with lower educational attainment over the long term than for students with similar background characteristics in predominately white schools. The analysis did not, however, find that the percent black or Latino in a neighborhood (measured by zip codes) negatively affected educational attainment, although other studies have found evidence to the contrary (Brooks-Gunn et al. 1993; South, Baumer and Lutz 2003). Overall, research on educational differences based on minority concentration in neighborhoods and schools remains thin.

Recently, researchers have begun to consider how the demographic presence of immigrants within communities impacts socioeconomic outcomes (Kasinitz et al. 2008; Zhou and Kim 2006). The experiences of immigrants are of particular interest because of their dual status as racial minorities, which makes them akin to other long-term resident minority groups, and as ethnic newcomers, enabling us to examine how cultural differences interact and change across generations in relation to the structural realities of American society. In an ethnographic study of Chinese and Korean immigrants in Los Angeles, Zhou and Kim (2006) found that their valuation of education – argued to be rooted in the cultural-structural conditions of their homeland – and realized educational success upon migrating to the U.S. is supported in large part by a supplementary education system that serves as an intermediate between the home and formal school. Established by the ethnic communities, these afterschool institutions provide resources and social capital that facilitate the children of Korean and Chinese

immigrants to graduate high school and gain entrance into prestigious universities in disproportionately large numbers.

Such supplementary schools, however, tend to exclude other noncoethnics because of language and cultural barriers. Zhou and Kim (2006) see this type of immigrant isolationism as less advantageous socially and, in the long run, economically. In fact, Kasinitz et al (2008) attribute much of the advantage of second-generation immigrants over their immigrant peers – a pattern observed across generation among virtually all U.S. immigrant groups – to being located between two cultural worlds. By living in both cultures, the second generation takes on the views of their immigrant parents and those of broader American society to create an entirely new and creative way of thinking that gives them an edge. The caveat here, of course, is that the net positive for a second generation immigrant youth depends on which immigrant norms are drawn on and to which segment of society incorporation occurs. Kasinitz et al speculate that, more often than not, combining both sets of norms produces net benefits for second generation immigrants. Thus, the ethnic composition of immigrants' social environment is likely to affect socioeconomic outcomes.

Analytic Model

In this analysis, segmented assimilation theory is estimated as the logarithm of the odds of postsecondary attainment as a linear combination of successive sets of predictor variables. The first equation or baseline model for testing the segmented perspective is the specification estimated for the conventional assimilation theory in the last chapter (Equation 4.2). Specifically, for each level of educational attainment beyond high school I estimate the model

$$\ln(P_i / (1 - P_i)) = \beta_0 + \beta_1 D_i + \beta_2 C_i + \varepsilon_{i,j} \qquad (5.8)$$

where D_i is a vector of covariates for socio-demographic measures that include ethno-generational status, primary schooling outside the U.S., and gender and C_i is controls for family's socioeconomic background.

The second estimated model, Equation 5.9, examines the contribution of contextual predictors to explain generational differences

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 D_i + \beta_2 C_i + \beta_3 CE_{i,j} + \varepsilon_{i,j} \quad (5.9)$$

where $CE_{i,j}$ augments the base model to include a vector of indicators for the j-th contextual environment for the i-th individual. Discussed above, this analysis explores the effects of several environmental domains important for educational achievement including family composition, school type and composition, and neighborhood composition.

Equation 5.10 then introduces a vector of determinants, SA_i , to measure selective assimilation which emphasizes cultural maintenance in response to an unfavorable or economically depressed social context.

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 D_i + \beta_2 C_i + \beta_3 CE_{i,j} + \beta_4 SA_i + \varepsilon_{i,j} \quad (5.10)$$

Recall that under the segmented assimilation theory, parents actively guard against unfavorable conditions that may propel their children onto a trajectory of downward assimilation by adopting an approach of restrictive assimilation. As such, immigrant parents, who hold high educational expectations for their sons and daughters, protect their children from negative influences by promoting strong ethnic ties and traditional cultural values, which include limiting social interactions to culturally/ethnically similar others, limiting participation in activities common to American adolescents, and requiring the use of the native language. It is through this cultural maintenance that parents regulate the influences of significant others (e.g., peers and teachers) on their children's socioeconomic achievement.

The next model adds an indicator for student's educational expectations, $SE_{i,}$, which in conjunction with parent's expectations for their child's social mobility,

represents the key measures of immigrant optimism hypothesis. Specifically, I estimate the following equation

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 D_i + \beta_2 C_i + \beta_3 CE_{i,j} + \beta_4 SA_i + \beta_5 SE_i + \varepsilon_{i,j} \quad (5.11)$$

Taken together, from a base model of socio-demographic characteristics, family background, and contextual measures, nested sets of covariates are added for (1) interactions effects between generation status and the contextual environment (2) parents expectations, (3) measures of selective assimilation, (4) interactions with similar others, (5) influences of significant others, and (6) students' expectations.

To test the fully specified model in Figure 5.1, I estimate equation

$$\ln(P_i / (1-P_i)) = \beta_0 + \beta_1 D_i + \beta_2 C_i + \beta_3 CE_{i,j} + \beta_4 SA_i + \beta_5 SE_i + \beta_6 M_i + \varepsilon_{i,j} \quad (5.12)$$

where M_i is a vector of indicators for academic ability and self-efficacy. Consistent with traditional status attainment research, control measures for cognitive ability and prior school achievement are added to the full model. There is much debate regarding the use of tests as measures of aptitude and intelligence, particularly whether differences are innate (Herrnstein and Murray 1994), psychological (Steele 1997; Steele and Aronson 1995), cultural (Kao 1995), or structural (Fischer et al. 1996). In addition to the potential biases associated with such tests, others dispute whether scores on proficiency and other examinations accurately predict future success in schooling (Atkinson 2002; Sacks 1997; Zwick 2004). The final model also controls for self-efficacy or the belief in one's own abilities to perform in a certain manner or attain certain goals. Researchers have noted that immigrants and the children of immigrants in particular tend to have low self-efficacy, often attributed to the difficulties and psychological stresses of adapting to life in the United States (Padilla and Duran 1995; Portes and Rumbaut 2006). Interestingly, however, empirical evidence has shown immigrant adolescents tend to outperform their native counterparts in school despite reporting less control over their lives (Kao 1999).

Data and Sample

Extending the analysis from Chapter 4 to test the segmented assimilation theory and contribution of students' academic ability, this investigation draws again from the National Educational Longitudinal Study (NELS). As before, the sample is limited to participants in the 1988-2000 panel of the data who also had a completed parent survey for 1988 base year. The sample is further restricted to those participants whose educational history was known as of the fourth (and final) wave of the survey. These criteria generate an analytic sample of 10,161 respondents.

To resolve problems associated with missing data, such as sample loss and inefficient estimates, multiple imputation procedures were used to impute missing values as outlined by Allison (2002) and using SAS's PROC MI. This method, under the Markov Chain Monte Carlo (MCMC) option, imputes missing data from an algorithm that generates a distribution of plausible values based on the observed relationships among all the variables in the analyses. I impute values for the missing data five times, creating five different datasets, although as few as three times is considered adequate for data with little missing information (Rubin 1987; Rubin 1996).[39] The five imputed datasets were then analyzed independently and results combined using SAS's PROC MIANALYZE, a procedure that uses variation in the separate results to correct the standard errors for any effects of impute values.

Estimates and corresponding standard errors were also adjusted to account for the survey design effects of the NELS sample. Because of the difficulties NCES faced in locating respondents 6 years after the last contact in 1994 for third follow-up survey and 8 years since most graduated high schools, individuals in earlier waves were oversampled who were unlikely to respond or could not be located during prior follow-up interviews (Curtin et al. 2002). To correct for the unequal sampling probabilities, I apply the NELS constructed weight (F4PNLWT) to make the sample representative of

[39] Most of 30 plus variables in this analysis have 5 percent missing or less, however, a listwise deletion of all observations that have a missing value for at least one of the variables would reduce the sample by almost 50 percent.

the 1988 eighth-grade class of base year. The analysis also accounts for potential bias due to the clustering of students within schools, which served as the primary sampling unit (PSU). Left uncorrected, the homogeneity (and non-independence) of students within PSUs artificially lowers standard errors and compromises tests of the hypotheses. Logistic regression models of students' postsecondary educational attainment are calculated using SAS's PROC SURVEYLOGISTIC to account for these features of the sampling design.

Operationalization

This analysis takes advantage of the longitudinal nature of the NELS data by using measures during the 8th grade (1988), high school years (1990 and 1992), and educational outcomes at age 26 (2000). Table 5.1 shows the weighted means by generational status for the variables used in the multivariate investigation. As an extension of the analysis in Chapter 4, the analytic sample and key measures of educational attainment and generational status and educational remain the same in this Chapter. Once more, this analysis investigates differences between immigrant and native-born youth across three levels of educational attainment: enrollment in any postsecondary institution after high school (attendance in a 2- or 4-year college), enrollment in a four-year college, and four-year bachelor's degree or higher. Measures are treated as dichotomous with each nominal category representing a successive level of attainment.

Recall that immigrant generational status is determined by two variables from the 1988 parent survey: parents' and student's place of birth. Because immigrant youth were in the U.S. by grade 8, students are considered 1.5-generation immigrants (rather than first-generation) if they were born outside the U.S. or any outlying area of the U.S. and at least one of their parents were also foreign-born. If the student was U.S.-born and at least one of his or her parents was born abroad, then the student was classified a second-generation immigrant. Finally, U.S.-born respondents of U.S.-born parents are

classified as third- and higher-order generation immigrants, often referred to as natives of native parentage or simply natives.[40] Other control variables measured during the 8th grade include race/ethnicity, gender, and whether 1.5 generation immigrants received any schooling outside the U.S. before the eighth grade. Also included is the NCES generated variable of SES to measure family socioeconomic background, which was used in Chapter 4. As in the previous analysis, the SES index measure is rescaled by multiplying by 10 to produce a range values from approximately -20 to 20.

Operationalization of the segmented assimilation theory begins at the contextual level. The measures of the contextual environment and the receptivity of the environment to educational attainment when students were in the eighth grade are considered along three dimensions: family, school, and neighborhood. To adjusted for the availability of family resources for higher education, measures of family composition and number of siblings are taken into account. Indicators for family composition use biological parents as the reference category and three dummy variables for one biological parent and partner (includes cohabiting partner or stepparent), single parent, and other family arrangement, respectively. School-level influences include an indicator for public school and two variables to flag suburban and rural schools with urban school as the referent. The percentage of students in the respondent's school receiving free or reduced price lunch was also included to gauge the supportiveness of the school environment to student's academic success. The expectation is that percent free lunch will have a negative impact on students' educational trajectory.[41] The receptiveness of the community comes from student's responses to the question 'what percentage of the people in the neighborhood you grew up were the same race and

[40] Children who are foreign-born yet have two U.S.-born parents are also identified as part of the native population, reasoning that these students are simply born abroad and return to the U.S. (e.g., military children).

[41] While the use of distinct categories of school poverty (e.g., quartiles) is preferred over the use of a continuous measure of percent free lunch, the sample is not distributed evenly enough to create realistic low to high levels of school disadvantage. For instance, the percentage of students receiving free lunch at the 75th percentile of the sample is 34 percent. When setting a high poverty rate at 75 percent of the student body, only 3.5% of the sample (roughly 360 students) is captured and most are of Hispanic ancestry (40 percent). Thus, concerns over subgroup samples sizes impede the use of the categorical measures of school disadvantage.

ethnicity as you?' This measure is expected to capture social capital in the form of similar others at the neighborhood level and believed to have a positive impact on educational attainment.

Following the models in Chapter 4, three variables measured in students' eighth grade year on the parent survey are used to capture parents' educational expectations of their child. The first measures whether parents expect their child to continue his/her education beyond high school (yes/no). A follow-up question asks, if *yes*; have you or your spouse started saving money for your eighth grader's education after high school (yes/no). The third variable, implemented by Glick and White (2004), is a scale score based on three items: how often parents discuss with their child school experiences, high school plans, and post-high school plans. Each question is coded from never (0), rarely (1), occasionally (2), and regularly (3). Responses from each of three items are summed and divided by three to produce a scale from 0 to 3 where those who never discuss school are coded as 0 and those who talk regularly as 3.

As an extension of parents' expectations, several variables are used to measure parents' protective influences over their child's assimilation to American society. One method of limiting acculturation is to preserve ethnic group's native language. Language maintenance is measured using a dummy variable for a language other than English is spoken in the home. A second indicator captures how well the student understands that language; coded as a continuous scale measure of not at all well (0), not very well (1), well (2), pretty well (3), very well (4). Also included is student's limited English proficiency, measured from student's self-assessment and teacher evaluation for adeptness of the English language and coded as 1 for limited English proficiency (LEP) and 0 otherwise. A final set of predictors measure parents' direct attempts to limit their child's Americanization by limiting (a) the amount time their child spends watching television or playing video games and (b) the amount of time going out with friends. Each variable is coded on a continuous scale of never (0), rarely (1), sometimes (2), and often (3).

Students interaction with 'similar' others – a second dimension of selective assimilation – is quantified by how often she/he speaks non-English language with their best friends in the neighborhood and school, respectively. The variables for frequency of spoken language are treated as a continuous and coded as never (0), sometimes (1), half the time (2), and always or most of the time (3).

In addition to parental expectations, significant others' encouragement to pursue postsecondary education is also measured for peers and teachers. I rely on the student questionnaire administered in 1990 for these measures, and thus are considered students' perceived encouragement from teachers and friends. With respect to teachers' perceived support, students were asked, "Do you agree with the follow statements about why you go to school? My teachers care about me and expect me to succeed in school". Responses are coded on a continuous scale of strongly disagree (0), disagree (1), agree (2), and strongly agree (3). For friends, students were asked, "Among the friends you hang out with, how important is it to continue education past high school" and coded as not very important (0), somewhat important (1), very important (2).[42] Because students listed as high school dropouts in the first follow-up survey were not asked these questions about their teachers or peers, a dummy variable flags is included for tenth grade dropouts.

Thought to arise from parents' expectations and those of significant others, measures of student's educational aspirations are measured as well. Remaining consistent with the analysis in Chapter 4, students' educational expectations are from their 10th grade response to how far in school they expect to go. Two dummy variables flag students expectations for either (1) two-year college or (2) four-year college or above. The reference category is high school or less.

Finally, in keeping with the status attainment tradition (e.g., Sewell, Haller and Ohlendorf 1970; Sewell, Haller and Portes 1969), additional controls are included for students' cognitive ability and prior achievement. Measures for cognitive ability are

[42] The incongruence in the years of parents educational expectations (measured in 8th grade) and teachers/friends expectations (measured in grade 10) is not taken as problematic given that parents are likely to influence with whom their child interacts.

captured from students' scores on a reading and math tests taken as part of the survey in 8th grade. Prior achievement is measured using students' self-reported GPA for grades 6 through 8 (standardized on a 4.0 scale). I include an indicator of students' self-efficacy—the belief in one's own abilities to perform in a certain manner or attain certain goals. The measure of self-efficacy, what the NELS refers to as "locus of control", is a composite measure constructed by NCES from a series of six items in the student questionnaire administered in 1988. These measures are examined under the fully specified model of immigrant status attainment in Figure 5.1.

Table 5.1. Descriptive Statistics by Immigrant Generation, Adjusted by Sample Weights

	Immigrant Generation			
	1.5	2nd	3rd Plus	Total
Individual-level predictors				
Race/Ethnicity				
White	0.164	0.383	0.792	0.734
Black	0.081	0.041	0.128	0.119
American Indian/Alaskan Native	0.000	0.000	0.015	0.013
Asian	0.399	0.127	0.009	0.033
Mexican	0.269	0.333	0.032	0.066
Other Hispanic	0.088	0.116	0.013	0.024
Puerto Rican	0.000	0.000	0.011	0.010
1.5 generation schooled outside U.S.	0.392	0.000	0.000	0.015
Female	0.524	0.545	0.498	0.503
SES index	-3.219	-1.497	0.043	-0.209
Parents' school expectations/valuation				
Child to continue education after high school	0.928	0.931	0.899	0.902
College savings	0.422	0.461	0.469	0.467
Talk to child about school (index: 0-3)	2.229	2.339	2.457	2.439
Selective Assimilation				
Home language other than English	0.858	0.735	0.091	0.173
Understand other language (index: 0-4)	2.741	2.186	0.216	0.475
Parents limit television (index: 0-3)	1.469	1.415	1.114	1.153
Parents limit friends (index: 0-3)	2.068	2.082	2.049	2.052
Interaction with similar others				
Language with neighborhood friends (index: 0-3)	0.778	0.591	0.066	0.137
Language with school friends (index: 0-3)	0.737	0.600	0.064	0.134
Influence of significant others				
Dropout of high school by grade 10	0.096	0.056	0.057	0.058
Teacher expectations (index: 0-3)	1.710	1.721	1.721	1.721
Peers college expectations (index: 0-2)	1.399	1.420	1.355	1.362
Student's Educational Expectations (10th grade)				
High school or less	0.147	0.102	0.126	0.125
Two-year or vocational college	0.275	0.297	0.298	0.297
Four-year college or higher	0.578	0.601	0.576	0.578
Limited English proficiency	0.107	0.042	0.018	0.023

(Continued)

Table 5.1. Continued

	Immigrant Generation			
	1.5	2nd	3rd Plus	Total
Individual-level predictors				
Prior achievement and ability				
Average grades (4.0 scale)	3.047	2.942	2.910	2.918
Reading test	49.101	51.150	51.060	50.993
Math test	50.791	50.997	51.007	50.998
Self-efficacy (NELS created variable)	-0.034	-0.015	0.019	0.015
Contextual-level predictors (base year)				
Family composition				
Biological parents	0.795	0.765	0.654	0.668
Stepparent or partner	0.078	0.071	0.141	0.133
Single parent	0.109	0.145	0.177	0.172
Other	0.018	0.020	0.028	0.027
Number of siblings	2.992	2.558	2.314	2.360
School environment				
Public	0.869	0.824	0.891	0.884
Urbanicity				
Urban	0.407	0.313	0.241	0.253
Suburban	0.503	0.547	0.424	0.437
Rural	0.090	0.140	0.336	0.310
Percent receiving free lunch	33.878	29.582	23.596	24.482
Neighborhood				
Percent same race/ethnicity in neighborhood	46.615	60.622	82.682	79.489

N= 10,161 and includes missing values imputed using SAS's PROC MI and MIANALYZE.
Means are weighted to represent the survey population using SAS's PROC SURVEYMEANS.

Educational Attainment and the NELS Data

Table 5.2 restates the educational outcomes by ethnicity and immigrant generational status for the NELS respondents explored in the last chapter and used for the current analysis. As shown in other studies (Kao and Tienda 1995; Keller and Tillman 2008; Mare 1995) and consistent with patterns observed for ethnic groups in Chapter 2, variation in educational attainment among immigrant generations is far greater within racial/ethnic groups than for the total population. Although patterns of

generational ascent and decline are observed among groups, the most consistent pattern is that of the second generation edge wherein second generation immigrants attain higher levels of schooling in disproportionately greater numbers relative to their 1.5 and third-plus generation ethnic counterparts.

These patterns of generational change, however, are more pronounced for certain ethnic groups and levels of educational attainment For instance, a second-generation edge is most evident for whites in any college attendance (2-year and 4-year), than enrollment in four-year college enrollment or bachelor's degree completion. The pattern is most consistent amongst Asians, where all three levels of educational attainment show the second-generation edge pattern with an increase in the second-generation and a significant decline thereafter. Among Mexicans, the pattern of second-generation advantage is only found for bachelor's degree completion or higher. For attainment levels of college enrollment, Mexicans have an upward generational trajectory where each generation has rates of attainment greater than the next, although the second and third-plus generations are not statistically significant.

Among blacks and other Hispanics, who are grouped by foreign-born parents (1.5/2nd generation) and native-born to native-born parents (three-plus generation) due to small subgroup sample sizes, having an immigrant parent is associated with greater rates of educational attainment at all levels. Although the 1.5 and second generation cannot reliably be disentangled for all ethnic groups, consistent with the bimodal distribution of immigrant selectivity that has become characteristic of contemporary U.S. immigration, 1.5 generation youth generally achieve exceptionally high rates of the college participation and graduation relative to native majority of third generation whites and their intra-ethnic peers. 1.5-generation immigrants of Mexican descent, however, are an exception with attainment rates substantially lower than the majority population and their ethnic peers.

Table 5.2. Postsecondary Educational Attainment by Ethnic Origins and Generational Status (Revisited)

	Any College Enrollment		College Enrollment		Bachelor's Degree or Higher		Unweighted N[a]	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	Std Dev
Non-Hispanic White								
1st generation	0.863	0.048	0.719	0.057	0.527	0.058	71	0.707
2nd generation	0.902	0.019	0.654	0.038	0.487	0.036	303	1.304
3rd plus generation	0.783	0.009	0.545	0.011	0.341	0.009	6,872	1.483
Non-Hispanic Black								
1st/2nd generation	0.970	0.021	0.781	0.055	0.352	0.105	59	0.548
3rd plus generation	0.739	0.026	0.426	0.030	0.182	0.020	840	0.548
American Indian/Alaska Native	0.644	0.045	0.243	0.040	0.106	0.030	99	0.000
Asian								
1st generation	0.877	0.061	0.714	0.057	0.489	0.052	341	2.000
2nd generation	0.955	0.018	0.773	0.040	0.623	0.046	237	1.949
3rd plus generation	0.823	0.052	0.482	0.049	0.260	0.041	112	1.673
Mexican								
1st generation	0.563	0.075	0.162	0.036	0.058	0.018	112	1.871
2nd generation	0.685	0.049	0.316	0.034	0.142	0.027	311	3.050
3rd plus generation	0.727	0.035	0.354	0.036	0.105	0.016	386	2.074
Other Hispanic								
1st/2nd generation	0.918	0.022	0.675	0.070	0.403	0.061	173	1.304
3rd plus generation	0.776	0.044	0.419	0.053	0.246	0.052	144	1.304
Puerto Rican	0.763	0.078	0.395	0.061	0.136	0.050	101	0.000
Total	0.780	0.008	0.521	0.010	0.313	0.009	10,161	0.000

Note: Means are weighted to represent the survey population using SAS's PROC SURVEYMEANS

[a] Use of multiple imputation procedures in this analysis generates five different dataset with missing values replaced in slightly different configurations for each imputation. Consequently, unweighted N's by generational status vary modestly across the imputed data.

In the previous chapter, the investigation tested whether the straight-line (family's socioeconomic background) or optimism hypothesis (parental and student expectations) account the differential patterns of educational attainment by ethnicity and generational status. With much of the generational gaps left unexplained by the two theories, this analysis examines the contribution of the segmented assimilation theory to explain the same persistent generational differences in educational attainment. The segmented assimilation theory is a comprehensive theoretical perspective covering both individual and contextual level factors. As with the previous theories, I begin with family's socioeconomic background, followed-up by the key tenets of the segmented assimilation theory which include measures of the contextual environment and parental

expectations and protective influences over their children's assimilation into mainstream American society. Finally, for each level of educational attainment, I evaluate the fully specified model in Figure 5.1, adding measures for student's prior achievement, cognitive ability, and self-efficacy.

Postsecondary Enrollment

The first model in Table 5.3, controlling for family background and exposure to the American educational system and gender, shows that rates of postsecondary enrollment among ethno-generational groups continues to differ markedly from the native majority. Shown in Chapter 4 as a test of the conventional assimilation theory, family background is a significant predictor of any college attendance, although it fails to explain the generational gaps in postsecondary enrollment. In fact, generational comparisons are largely accentuated net of SES status with only the educational disadvantage of American Indians accounted for. For instance, comparing ethnic groups by generational status to third-plus generation whites, 1.5-generation immigrants of Mexican descent and other Hispanic and black immigrants of foreign-born parents are 2.332, 8.059, and 18.663 times more likely to attend some type of postsecondary schooling during the roughly eight years following high school. For the second-generation, immigrants of European, Asian, Mexican ancestry are 2.176, 5.114, and 2.542 times more likely to attend college than third and higher generation whites net of family background. Among long-term ethnic residents, only students of black (1.778 times) and Puerto Rican (2.528 times) backgrounds, once at parity with native whites, are more likely to have college experience controlling for family background.

Intra-ethnic generational differences in the odds of enrollment are shown in Table 5.4. The most striking trend observed in Model 1 is the advantage of the second-generation over their three-plus generation peers controlling for family background. Comparing the differences in the odds ratio coefficients within each White, Asian, Mexican group, the second generation significantly exceeds the likelihoods of their

third generation peers. For instance, the difference in the odds coefficients between the second and three-plus generations in Table 5.4 shows an advantage of 2.176, 4.311, and 1.777 for White, Asian, and Mexican youth respectively. Discussed in Chapter 4, the second-generation edge pattern among Mexican students emerges only after controlling for family background, suggesting that capital resources play an important role in the postsecondary educational attainment for immigrants arriving from Mexico. Without holding socioeconomic background constant, rates across generations among Mexican youth follow an upward trajectory described by the conventional theory. As for differences between the 1.5-generation and the second- and third generations respectively, gaps are not significant. Foreign parentage, however, does appear to matter for immigrants of black and other Hispanic descent, who are more likely to attend college than their long-term resident counterparts. Again, because of small over ethno-generational subsamples, 1.5 and second generation differences cannot be unraveled for these minority groups.

The second model in Table 5.3 (Column 2) examines the contextual environment during the students' eighth grade year on their long-term college-going behavior. Controlling for the availability of family resources for higher education, students with more brothers and sisters are less likely to enroll in postsecondary with the likelihood of attending decreasing by 8 percent for every sibling. In terms of family composition, students in a home with a stepparent are 23.7 percent less likely to attend any college compared to students from a two-biological parent household. Moreover, consistent with some streams of research, kids in stepfamilies have worse outcomes than students from single-parent families (Biblarz and Raftery 1999), although other studies have found the effects for stepfamily arrangements are more similar to single parent families than residing with the two original parents (Sandefur and Wells 1999). Advantages of living in a two-biological-parent home are argued to stem from the absence of instability itself as well as experiencing a richer set of social relationships within and outside the home. Two parents, moreover, may provide more effective social control and discipline than families where only one or neither biological parent is

present. Overall, family background has a greater influence on educational attainment than family structure, but the direct effect of family structure should not be discounted, especially for studies of minority groups where racial differences on the effect of family structure have been found (Duncan 1994; Kao and Thompson 2003; Krein and Bellar 1988; Wojtkiewicz 1993).

For structural conditions at the school level, students in public school during the eighth grade in 1988 are half as likely as private school students to enroll in any postsecondary in the years following high school. Meanwhile, attendees of suburban schools are 0.760 times as likely as students in urban schools to later any postsecondary institution net of school type and poverty level. School poverty – measured by the percent of the student body receiving free lunch – is also found to reduce the likelihood of college-going, although the effects are marginally significant at the $p < 0.10$ level. Finally, results show that the likelihood college enrollment is greater for students living in neighborhoods with a racial/ethnic composition more like themselves. For instance, a for every 10 percent increase in the common racial composition of a neighborhood there is an associated 4 percent increase in the likelihood of attending a postsecondary school. Although many of contextual factors measured in this analysis are significantly related to later college-going, environment controls fail to account for any of the inter- or intra-ethnic generational differences in Table 5.3 and 5.4.

To test the central tenet of the segmented assimilation theory that immigrants' generational trajectory depends on the contextual environment, interaction effects between generational status and the environment are added to the model. Although both generational status and environment conditions have significant effects on college-going independently, results of this analysis fail to confirm that ethno-generational differences vary by context (results are available upon request). Specifically, interactions between ethno-generational status and school poverty and neighborhood composition respectively, yield no significant results for the 28 interaction effects tested or is the model fit (reduced variation) improved by their addition. These findings fail to support the hypotheses C1.1 and C1.2 that upward/downward assimilation depends on

the socioeconomic context. Xie and Greenman (2005, pg. 40), estimating 360 regressions with school and neighborhood interactions, were similarly unable to substantiate the dependency of immigrant assimilation on the environment where only 13 behaved in a manner consistent with the theory.

In this analysis, the lack of support for generational differences in adolescents' college-going according to variations in the contextual environment may be the result of several factors. First is the issue of small subsamples of ethnic and generational status groups, which is likely to hinder our ability to detect the true interaction effects between generational status and the contextual environment. Given the recent arrival of late-twentieth-century-immigrants, the majority of second- and later-generation immigrants are children or adolescents and attend primary and secondary school. It is only within the last few decades that these immigrants have begun to enter college and the workforce in numbers great enough to assess their socioeconomic progress. Until new data sources covering immigrant populations and their experiences emerge, small generational subsamples will remain an issue for immigrant studies. A second potential issue is selecting the appropriate context for estimating generational and environmental interactions as well as suitable measures of the environment. Although school disadvantage and neighborhood ethic composition are investigated here, different indicators or other environments may yield results in favor of the theory. Finally, the outcome measure of any college enrollment (2- or 4-year) is a lenient threshold for defining upward mobility as opportunities for postsecondary schooling have dramatically increased during the latter half the 20th century. More stringent attainment measures of four-year attendance and bachelor's completion, covered in the next sections, may better capture the interaction between generational assimilation and the environment.

Model 3 in Table 5.3 examines the mediating effects of parental expectations on generational and environmental differences in educational attainment. Net of family background and the contextual environment during the eighth grade, students whose parents expect them to continue schooling after high school, put money away for their

college education, and talk frequently to them about their school experiences and plans have 8.239 times greater odds of attending a postsecondary institution than a student whose parents have no educational expectations. The introduction of parental expectations for their child's education does not, however, have a discernible impact on the environmental measures as the odds ratios for contextual effects remain unchanged. As for parental expectations on generational differences, although ethno-generational gaps narrow slightly, significant differences observed in Model 2 largely persist relative to native whites as well intra-ethnic comparisons in Table 5.4. Only in the case of long-term residents of Mexican descent is a modest advantage over three-plus generation whites accounted for by parents' reported expectations.[43] These results suggest that parent expectations alone do not account for generational gaps in college-going behavior in the years after high school.

Models 4 and 5 test the effects of parents' protective influences over their children's assimilation to the American mainstream. A prerequisite for testing hypothesis C1.3 – that parents' protective influence or "selective acculturation" mediates downward assimilation in an advantaged environment – was that the trajectory of assimilation across generations depends on the contextual environment. Although the interaction effects testing this dependency failed to reach statistical significance and were subsequently removed from the model equations, results show that measures of selective acculturation are associated with long-term educational attainment. In Model 4, for instance, students who are both proficient in English and exposed to another language other than English in the home are 82 percent more likely enroll in postsecondary institutions than students with English only speaking households. Among students with a home language other than English but who are not English proficient, the odds of going to college reduce to less than 7 percent. These findings lend support to Kasinitz et al (2008) conclusions that minorities (and second-generation immigrants

[43] These finding differ from those observed in Chapter 4 where, absent contextual level measures, parental expectations account for the second generational advantage among Mexican immigrants. Since parents' expectations for their children's future and the environment in which families live affects one another, controlling for both effects simultaneously indicates that other factors may account for long-term educational outcomes of immigrant groups, particular among immigrants of Mexican descent.

in particular) have the greatest advantage when their cultural distinctiveness is melded with American norms and values. Students' understanding of the non-English language used at home, however, is not a significant factor or whether language is used among neighborhood and school friends in Model 5. Other selective acculturation measures that capture parents' direct attempts to limit their child's Americanization, which included limiting time spent playing video games and watching television and going out with friends, are also not significant.

The inclusion of home language and limited English proficiency in the model equations serve to narrow ethno-generational differences compared to native whites as well as generational gaps within ethnic groups. In Model 4, for example, the attainment advantage observed among newly arriving black and Other Hispanic immigrants and second generation students of white, Asian, and Mexican heritage compared to native whites lessens considerably with the addition of parents' protective influences, although the differences remain significant. Only in the case of 1.5-generation immigrants of Mexican descent and students of Puerto Rican ancestry (whose experiences are often likened to those of immigrants) is the relative advantage over three-plus generation whites, net of family background and social context, accounted for by parents' protective influence.

In terms of intra-ethnic comparisons in Table 5.4, the addition of parents' protective influences (i.e., home language and English proficiency) substantially lessens the disparities observed between the second and third generations even though such differences remain significant. For instance, among ethnic whites and Asians, the advantage of the second generation over their third generation peers lessens from Model 3 to 4 as the *relative* difference in the odds decreases by roughly 33 percent (5.982 to 4.348 times greater).[44] Among ethnic whites and black immigrants, the differential between recent arrivals and three-plus generation youth decreases by 32 percent (2.176 to 1.791 times greater) and 20 percent (10.788 to 8.868 times greater) respectively after

[44] Values in the intra-ethnic comparison tables report the differences in the odds ratio coefficients. Statistics for 'times greater than' comparisons *among/within* ethnic groups by generational status is calculated from the following equation: $1 + (\frac{ethnogeneration\ X - ethnogeneration\ Y}{ethnogeneration\ X})$

introducing measures for selective assimilation. The comparison between Mexican second and three-plus generation is an exception wherein the second-generation advantage detected for postsecondary enrollment is marginally accounted for by the measures for selective acculturation ($p < 0.10$). This finding runs counter to the Optimism Hypothesis, which predicts that high expectations for achievement passed from immigrant parents to their children account for the second-generation edge. It may be that for Mexicans, who arrive to the U.S. with less social and economic capital than other immigrant groups, that high expectations as well as the ability to act on such aspirations by overcoming language barriers explains the generational difference. Such ethnic differences in the assimilation process indicate a need for future research to examine how the immigrant experience varies within ethnic groups instead of estimating a common empirical model across all minority groups.

Model 6 introduces peer and teacher expectations into the model equation which are conceptualized in the current analysis as an extension of parents' protective guidance (i.e., selective acculturation) whereby parents regulate the influences of significant others (teachers and peers) on their children's educational attainment. Of the measures of significant others' expectations, only peers' college aspirations in the 10th grade had a significant effect on students' long-term postsecondary enrollment net of students dropping out school were in 10th grade. Specifically, students who believed their peers thought continuing education past high school as 'somewhat important' versus 'not important' were 62.5 percent more likely to attend a college after high school. The likelihood of college going increases to 164 percent when peers' expectations for continuing school after high school rise to 'very important' compared to not important. As for students who dropped out of high school in the 10th grade – included in part because students listed as high school dropouts in the first follow-up survey were not asked these questions about their teachers or peers – are half as likely to enroll in a postsecondary institution as students who remained in school.

Although significantly impacting the likelihood of attending college, measures of significant others' expectations and dropping out of high school in the 10th grade fail

to explain generational differences among white and Asian, and Mexican students in Table 5.3. In fact, only the relative advantage of long-term blacks over native whites is explained by including terms for peer expectations and high school drop out. Generational differences, in relation to native whites as well as intra-ethnic differences in Table 5.4, remain unchanged. Other measures of the segmented assimilation model, particularly those tapping the selective acculturation, also remain stable in model 6. The lone exception is the lesser odds of attending college associated with students who have a stepparent compared to two biological parents, suggesting that students in such household environments may be more susceptible to the influence of peers and/or dropping out of high school.

Hypothesized to be influenced first by parents' expectations and protective guidance, and then by the significant others, Model 7 tests the effects of students' own expectations of their educational future in the 10^{th} grade on their actual college-going behavior after high school. Results show that students' expectations for attending any postsecondary institution are significant (2.432 times higher for two-year college and 6.807 times higher odds for four-year college and above) and account for several ethno-generational differences. Relative to native whites in Table 5.3, for instance, differences are narrowed for newly arriving blacks and other Hispanics, and only marginally significant at the $p < 0.10$ level for second-generation white and Asian students.[45] On the other hand, introduction of students' expectations accounts for some of the intra-ethnic differences in Table 5.4, particularly the second-generation edge observed among white and Asian immigrants, which are no longer statistically significant. Both the significance of students' expectations on college-going and its accountability of the second-generation advantage net of family background and parents' expectations is indicative of the optimism hypothesis tested in the prior chapter.

The results for any postsecondary college enrollment tentatively suggest that expectations (especially students) better explain immigrant patterns of incorporation than the contextual environment favored by the segmented assimilation theory. Even

[45] No significant differences remain between native whites and other three-plus generation groups before the addition of students' college expectations into the model equation.

with the addition of inputs in Model 8 accounting for students' academic achievement and self-efficacy (all found to have a positive and significant effect on college-going), inter- and intra-ethnic differences and the significance of students' expectations remain unchanged from Model 7. Although there is evidence that contextual environment does influence enrollment to any college, immigrant patterns of college-going do not appear to depend on the economic composition of students' school or the racial make-up of their neighborhood. Moreover, measures of selective assimilation—sans environment-immigrant generation interactions—generally fail to significantly impact enrollment behavior or generational differences as suggested by segmented assimilation theory. Only the intra-ethnic differences between second and three-plus generation youth of Mexican descent was accounted for by the measures of selective assimilation, of which only the variables of limited English proficient (negative) and home language other than English (positive) had a significant association. Although because students' understanding of non-English home language is not significant, it is unclear if the measures under selective assimilation truly reflect parents' protective influences in this model. Consistent with the theory, however, is the influence of significant others, especially peers' college expectations during the 10th grade, which is an important factor for students' future college enrollment factors even after controlling for student's own expectations and academic performance.

The next section examines whether this pattern of findings persist when we narrow the definition of college-going from any postsecondary attendance to enrollment at a four-college.

Table 5.3. Logistic Regression Predicting Any Postsecondary Enrollment under Segmented Assimilation Theory (Odds Ratio)

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Contextual Environment								
Family Composition								
Biological Parents		–	–	–	–	–	–	–
Stepparents		0.763*	0.767*	0.771*	0.769*	0.883	0.936	0.951
Single parents		1.010	1.018	1.036	1.035	1.152	1.182	1.235
Other		1.234	1.261	1.276	1.275	1.411	1.523	1.728†
Number of siblings		0.920***	0.935**	0.933**	0.933***	0.942*	0.959†	0.955†
School Environment								
Public School		0.531**	0.565*	0.580*	0.581*	0.616*	0.639*	0.703†
Urbanicity								
Urban		–	–	–	–	–	–	–
Suburban		0.760*	0.774*	0.784†	0.781†	0.796†	0.818	0.801
Rural		0.847	0.854	0.868	0.865	0.859	0.913	0.869
Percent receiving free lunch		0.996†	0.996†	0.996†	0.996†	0.995*	0.995†	0.995†
Neighborhood								
Percent same race/ethnicity in neighborhood		1.004*	1.004*	1.004*	1.004*	1.004*	1.003	1.002
Individual Level Factors								
Ethno-Generational Status								
1.5 generation								
White	2.102	2.233	1.968	1.568	1.486	1.308	1.418	1.484
Black - 1.5/2nd generation	18.663**	19.609**	16.753**	13.790**	13.499**	14.925**	13.712*	16.046**
Asian	3.080	3.874	3.788	2.847	2.792	2.205	2.080	2.113
Mexican	2.332*	2.950**	2.314*	1.708	1.721	1.864	2.169*	2.217*
Other Hispanic - 1.5/2nd generation	8.059***	7.956***	6.716***	4.662***	4.692***	4.521***	4.025**	4.503***

Unweighted N = 10,161 (Continued)

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.3. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Ethno-Generational Status								
2nd generation								
White	2.176**	2.274**	2.161**	1.791*	1.798*	1.966*	2.052†	2.091
Asian	5.114***	5.732***	4.977**	3.509**	3.472**	2.990*	2.416†	2.341†
Mexican	2.542***	3.103***	2.751***	1.931*	1.973*	1.943*	1.880*	1.916*
3rd plus generation								
White	—	—	—	—	—	—	—	—
Black	1.778**	1.892***	1.553*	1.555*	1.556*	1.315	1.155	1.488†
American Indian/Alaska Native	0.901	1.044	1.013	1.237	1.218	1.047	1.005	1.161
Asian	0.803	0.824	0.832	0.807	0.807	0.824	0.972	0.951
Mexican	1.365	1.530*	1.369	1.076	1.074	1.062	1.071	1.263
Other Hispanic	1.377	1.548	1.539	1.357	1.346	1.170	1.419	1.550†
Puerto Rican	2.528*	2.766*	2.986*	2.172	2.247	2.219	2.379	2.044
1.5 generation schooled outside U.S.	0.807	0.830	0.833	0.866	0.884	0.887	0.693	0.619
Female	1.497***	1.520***	1.565***	1.564***	1.572***	1.465***	1.372***	1.361***
SES index measure	1.175***	1.165***	1.136***	1.135***	1.135***	1.127***	1.109***	1.100***
Parents' School Expectations/Valuation								
Child to continue education after high school			2.695***	2.646***	2.646***	2.265***	1.704***	1.370*
College savings			1.431***	1.433***	1.431***	1.434***	1.278*	1.274*
Talk to child about school (index: 0-3)			1.288***	1.270***	1.273***	1.227**	1.201*	1.210*
Selective Assimilation								
Home language other than English				1.819*	1.789*	1.874*	1.945*	2.084**
Understand other language (index: 0-4)				0.944	0.951	0.920	0.895	0.873
Limited English Proficiency				0.588*	0.595*	0.605*	0.596*	0.683†
Parents limit television (index: 0-3)				1.074†	1.076†	1.034	0.997	0.989
Parents limit friends (index: 0-3)				1.062	1.061	1.070	1.054	1.025

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

(Continued)

Table 5.3. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Interaction with Similar Others								
Language with Neighborhood friends (index: 0-3)					1.231	1.258	1.236	1.262
Language with School friends (index 0-3)					0.798	0.815	0.896	0.921
Influence of Significant Others								
Dropout of high school by grade 10						0.554*	0.595*	0.774
Teacher Expectations (index 0-3)						1.109	1.009	1.001
Peers College Expectations (index 0-2)						1.625***	1.282**	1.324***
Student's Educational Expectations (10th grade)								
High school or less							–	–
Two-year or vocational college							2.432***	2.186***
Four-year college or higher							6.807***	4.414***
Prior Achievement and Ability								
Average grades (4.0 scale)								1.404***
Reading test								1.019**
Math test								1.022*
Self efficacy (NELS created variable)								1.193*
Intercept	3.556***	7.716***	1.330	1.057	1.057	0.617	0.415*	0.033***
Model Fit Statistics (Average)								
AIC	8722.870	8619.470	8339.810	8310.070	8310.250	8019.660	7554.450	7326.380
-2 log-likelihood	8686.870	8565.470	8279.810	8240.070	8236.250	7939.660	7474.450	7234.380
Degrees of freedom	18	27	30	35	37	40	42	46
Log likelihood ratio test		121.400***	85.660***	39.740***	3.820	296.590***	465.210***	240.070***
Additional degrees of freedom		9	3	5	2	3	2	4

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.4. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Any Postsecondary Enrollment

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
White generation 1.5 - generation 2	-0.074	-0.041	-0.193	-0.223	-0.312	-0.658	-0.634	-0.607
White generation 1.5 - generation 3	2.102	2.233	1.968	1.568	1.486	1.308	1.418	1.484
White generation 2 - generation 3	2.176**	2.274**	2.161**	1.791*	1.798*	1.966*	2.052†	2.091†
Black generation 1.5 & 2 - generation 3	16.885**	17.717**	15.200*	12.235*	11.943*	13.610*	12.557*	14.558**
Asian generation 1.5 - generation 2	-2.034	-1.858	-1.189	-0.662	-0.680	-0.785	-0.336	-0.228
Asian generation 1.5 - generation 3	2.277	3.050	2.956	2.040	1.985	1.381	1.108	1.162
Asian generation 2 - generation 3	4.311**	4.908**	4.145**	2.702*	2.665*	2.166*	1.444	1.390
Mexican generation 1.5 - generation 2	-0.210	-0.153	-0.437	-0.223	-0.252	-0.079	0.289	0.301
Mexican generation 1.5 - generation 3	0.967	1.420†	0.945	0.632	0.647	0.802	1.098	0.954
Mexican generation 2 - generation 3	1.177*	1.573*	1.382*	0.855†	0.899†	0.881†	0.809	0.653
Other Hispanic generation 1.5 & 2 - generation 3	6.682***	6.408***	5.177**	3.305**	3.346**	3.351**	2.606*	2.953*

†p <0.10; *p <0.05; **p <0.01; ***p <0.001

Four-Year College Enrollment

Table 5.5 shows nested models testing the segmented assimilation theory using the outcome measure of four-year college enrollment. As for the any postsecondary enrollment models, Model 1 provides the baseline form of the segmented theory wherein generational differences are controlled by family socioeconomic status (SES) and individual background characteristics affecting educational attainment (any schooling outside the U.S. and gender). Once again, Model 1 in Table 5.5 takes the same form as the Conventional Assimilation Theory tested in Chapter 4. While the nuances of adding family SES on generational differences four-year enrollment are discussed elsewhere (see previous chapter), it is important to note that there is a greater range of unconditional variation between ethno-generational groups than for any postsecondary attendance. Moreover, the addition of family background attenuates and, in some cases, completely accounts for the generational gaps in the odds of four-year college between and within ethnic groups. For instance, relative to the majority population the unconditional advantage for second-generation whites and disadvantage for third generation blacks and other Hispanics, Mexicans, and Puerto Ricans is mitigated once family background is taken into account.

Despite family background accounting for several generational gaps, significant differences remain in Model 1 both between and within ethno-generational groups. Compared the native white majority, for example, 1.5 generation Asians (2.436 times) and blacks and other Hispanic students with a foreign born parent (4.128 and 3.103 times respectively) have greater odds of attending a four-year institution net of SES. Among second-generation immigrant groups, students of Asian (1.967 times) and Mexican (1.498 times) descent are also more likely to pursue four-year college than long-term resident whites. However, among minority native groups – many of whom are statistically equal controlling for family background – Native Americans and third-

plus generation Asians are half as likely to enroll in a four-year institution relative to native white students.[46]

Within ethnic groups, Table 5.6 shows that students with at least one foreign-born parent (students defined as being part of the 1.5 or second generation) outperform their long-term resident peers controlling for family background with exception of ethnic whites. Black and Other Hispanics with foreign-born parents in Model 1, for instance, have a difference in the odds of going to a four-year college of 2.912 and 2.394 higher than their three-plus generation ethnic peers (relative difference of 3.234 and 4.889 times greater).[47] Among Asians, both the 1.5 and second generation respectively have odds coefficients of 1.950 and 1.481 higher than their third and higher generation counterparts (7.217 and 5.404 times greater). Coefficient differences between Asians of the 1.5 and second generation, both of whom are children of immigrants, are not statistically different. For students of Mexican descent, similar to ethnic Asians, a second-generation advantage pattern emerges whereby the second-generation exceeds the performance of the three-plus generation with a difference in the odds of 0.746.[48] The second-generation edge pattern, also known as the Optimism Hypothesis because overachievement is thought to arise from students' exceedingly high expectations which are passed on from their immigrant parents, is examined in Chapter 4. In this Chapter, the successive models to follow examine whether conditions of the segmented assimilation theory account for remaining inter- and intra-ethnic generational differences.

Central to the segmented assimilation theory, Model 2 in Tables 5.5 and 5.6 introduce contextual level factors that impact the likelihood of college-going. For many students, one of the greatest obstacles to attending a four-year college is the greater financial costs to families for tuition and room and board compared to that of two-year

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[46] It should be noted that estimates for three-plus generation Asians are suspect results should be interpreted with caution.

[47] Statistics for 'times greater than' comparisons *among/within* ethnic groups by generational status are calculated from the following equation: $1 + (\frac{ethnogeneration\ X - ethnogeneration\ Y}{ethnogeneration\ X})$

[48] Other generational differences among Mexican immigrants, controlling for family background, fail to reach statistical significance.

school. Results for family composition, which control for the availability of family resources for higher education, are consistent with the greater economic burden to families. Specifically, students who live with stepparents, single parents, and other custodians are less likely to attend a four-year institution than students in a household with two biological parents (range of 20 to 80 percent less likely). In addition to parental structure, students with more siblings have lower odds of attending a four-year college. As for the school environment in 8th grade, public school students were 56 percent as likely as students attending a private school. School urbanicity and percent of students receiving free lunch, however, were not found be significant determinants of future four-year enrollment. At the neighborhood-level, four-year college enrollment is greater for students living in neighborhoods with a racial/ethnic composition more like themselves.

Consistent with the results for any postsecondary enrollment, the addition of contextual factors does not explain either inter- or intra-ethnic generational differences in four-year college-going net of family background. Instead, adding controls to the model for students' family, school, and neighborhood environment actually exposes previously accounted for ethnic differences. Specifically, the parity of long-term resident blacks and students of Puerto Rican origins to native whites in Model 1 of Table 5.5 masks the relative disadvantage captured by family background (see Chapter 4). With the addition of contextual measures in Model 2, however, black (1.651) and Puerto Rican (1.970) students are now at a conditional advantage in four-year college-going relative to three-plus generation whites. If we take together the findings that (1) students in family arrangements other than two biological parents are less likely to attend a four-year school and (2) the third-plus generation is less likely to live in household two biological parents as shown in Table 5.1, then we see that odds of four-year enrollment for blacks and Puerto Ricans are remarkably strong considering that they have enrollment rates, net of family background, equivalent to the native majority despite presumably greater limitations on the availability of family resources.

To test the chief tenant of the segmented assimilation theory that generational trajectory is dependent on the contextual environment (Hypotheses C1.1 and C1.2), this time for four-year college enrollment, interaction terms were separately added between ethno-generational status and (1) school-level poverty and (2) racial/ethnic composition of student's neighborhood in eighth grade. Once more, none of the 28 interaction effects between entho-generational status and measures for the contextual environment was statistically significant. The addition of the interaction terms, moreover, failed to significantly improve the model fit (i.e., explained variation). In sum, these results failed to confirm that upward generational mobility – measured by educational attainment – occurs in favorable environments or that downward movement is associated within a disadvantaged context. As a central component of the segmented assimilation theory, the lack of environmental dependency casts doubt on the theory's ability to explain differences in immigrants' educational experience.

Despite failing to confirm Hypothesis C1.1 and C1.2, the remaining models in Table 5.5 and 5.6 examine subsequent intervening relationships predicted by the segmented theory, less the interaction effects. Model 3 introduces parental expectations of their child's educational future, which is situated in Figure 5.1 as mediating generational and environmental differences in educational attainment and a prerequisite to parents' protective influences over their child's school attainment. Results show significant effects on four-year college enrollment for parents' expectations that their child to continue schooling after high school and talking to children about their school experiences.[49] Specifically, students whose parents expect them to pursue higher education and talk frequently to them about school have nearly 8 times greater odds of attending a four-year college than parents who have minimal expectations.

[49] Unexpectedly, given the high financial costs of four-year college, parents who saved money for their child's college education did not significantly impact student's college-going despite being significant for any postsecondary enrollment (two-year or four-year). It's possible that parents who not only expect their child to attend college, but a four-year college, don't think to explicitly set aside money for their child schooling after high school. For parents who have expectations of their child's education beyond high school, but aspirations less than a four-year institution, there may be an urgency to save for the future. Because the current analysis uses a binary measure of parents' educational expectation (attend beyond high school or not), it is unclear whether parents' expected institutional level informs college saving. Future research may consider including an ordinal measure of parental expectations.

Similar to the results found for the any postsecondary model, the addition of parental expectations in Model 3 has no effect on the environmental measures as the odds ratios for contextual effects remain unchanged. As for parental expectations on generational differences in four-year college-going, although ethno-generational gaps modestly narrow for some groups, significant differences observed in Model 2 remain appreciably unchanged relative to native whites as well as for intra-ethnic comparisons in Table 5.6. In sum, results using the NELS data once again show that parental expectations alone are unable to explain generational gaps in future college enrollment.

Models 4 and 5 introduce measures of selective assimilation; operationalized as parents' protective influence over their child's direct acculturation through language maintenance and restricting outside influences (Model 4), and indirectly through interactions with similar others (Model 5). Results for parents' direct interventions only shows restrictions on television watching and playing video games to have a positive and significant effect on children's enrollment to a four-year college where students whose parents 'often' place limits have a 51.6 percent greater odds than parents who 'rarely' restricted such activities. Understanding the language of one's ethnic group also has a positive impact and reaches statistical significance once language use with peers is controlled in Model 5 with a 15.6 percent incremental increase in the likelihood from 'not at all well' to 'very well'. Interactions and use of mother tongue with one's ethnic peers, however, failed to be statistically meaningful for future college enrollment.

Selective assimilation results for four-year college enrollment differ from those found for the any postsecondary attendance analysis where limited English proficiency (negatively) and a language other than English spoken at home (positively) significantly affect any college-going, but not students' understanding of non-English language or restrictions on television watching as detected previously. The importance of limiting student's TV watching and understanding a foreign language on the probability of attending a four-year college likely reflects the competitive admissions to these institutions which, in addition to limited enrollment space, emphasize diversity and well-roundness in terms of high academic standing and extra-circular activities.

Moreover, because four-year institutions typically require non-native students to take the Test of English as a Foreign Language (TOEFL) to prove their English is fluent enough to attend a college in the U.S., limited English language speakers are likely to shy away from four-year schools. Two-year and community colleges, on the other hand, tend to have open enrollment policies and offer a range of studies from short technical programs to remedial courses. Consequently, enrollment to 2-year schools likely offers a first step for immigrants with low socioeconomic backgrounds and insufficient human capital including limited mastery over the English language.

Support for the idea that parents' protective influences (i.e., selective assimilation) differentially affect the odds of enrollment depending on college type can be found in the inter- and intra-ethnic comparisons for the any college and four-year college models. In the any college analysis in Table 5.3, for instance, the addition of parents' protective influences (home language and English proficiency) in Model 4 account for the greater odds of college-going for *1.5*-generation Mexicans and students of Puerto Rican ancestry – groups who both have strong traditions of speaking Spanish as a primary language – relative to native whites. For four-year college enrollments, measures for understanding of non-English home language and parental restrictions on TV watching in Table 5.5 explain the relative advantage found for *second*-generation Mexicans and Puerto Ricans over native whites. With bilingualism more common among second-generation immigrants and Puerto Ricans considered by some to be a quasi-immigrant group, these results are generally consistent with parents' seeking to shield their child from complete Americanization in order to ensure their admissions to the more competitive four-year colleges. Thus, the mediating effects of selective acculturation (linguistic and cultural) on the probability of enrolling in a four-year institution show modest support consistent with the segmented assimilation theory (Hypothesis C1.3), albeit untethered to the socioeconomic conditions of student's local the environment.

As for intra-ethnic comparisons of four-year enrollment in Table 5.6 and consistent with the results for any postsecondary enrollment, the addition of parents'

protective influences in Model 4 narrows several of the gaps observed between students of foreign-born parents (1.5 and second generation immigrants) and third and higher generations, though differences remain largely significant. For instance, among Asians, the respective advantage of the 1.5 and second generation over their third generation peers lessens from Model 3 to 4 as the *relative* difference in the odds decreases by roughly 20 percent (1.5 generation advantage goes from 7.524 to 5.249 times greater and second generation from 5.357 to 4.479 times greater). Among black and other (non-Mexican) Hispanics with foreign-born parents, the relative differential declines by 23 percent (3.153 to 2.667 times greater) and 25 percent (4.368 to 3.528 times greater) respectively after introducing measures for selective assimilation. The comparison between Mexican second and three-plus generation is an exception wherein the second-generation advantage detected for postsecondary enrollment is marginally captured by the measures for selective acculturation ($p < 0.10$). Once again, following the results for any postsecondary enrollment (see Table 5.4), only the gap between second and third generation students of Mexican ancestry are accounted for by measures of selective acculturation. In other words, the advantage of second generation Mexicans over their three-plus generation ethnic peers is due in part to parents' protective influences over their child's assimilation into American mainstream culture.

While this finding for second-generation Mexicans is curious in contrast to the Optimism Hypothesis which contends that expectations (parental and child) explain the second-generation advantage, it is plausible that elements of the segmented assimilation theory are also at work. Specifically, rather than parents protecting their child from negative influences stemming from the economic distress of the immediate local environment, results suggest that difficulty in one's homeland may be important as well. For instance, immigrant parents arriving from Mexico, intimately familiar with the economic hardship of their home country, may be more diligent in keeping their child away from distractions that would potentially jeopardize success in school and future socioeconomic pursuits. It is reasonable to hypothesize that second generation children – being born in the U.S. – are especially vulnerable compared to 1.5 generation

teenagers given their greater familiarity with the English language and American culture, thus immigrant parents' may double their protective efforts. For immigrants arriving from socioeconomically advantaged homelands, such as Europe and Asia, parents' protective influences may be less overt in areas of restricting television watching and playing video games. Instead, it is possible that capital-rich-immigrants indirectly keep their children out of trouble by enrolling them in academic rich extra-curricular activities, such as music lessons, thereby limiting any time for distractions and bolstering future school achievement. While an analysis of these conditions is beyond the scope of the present study, future research might consider homeland differences as a precursor to parents' efforts to safeguard their child from full immersion into American society.

Model 6 examines the effects of significant others' influence, measured by friends' and teacher's *perceived* encouragement to attend college after high school, on student's future four-year college enrollment.[50] While only the college aspirations of peers in the 10th grade was significant on any college enrollment, Table 5.5 shows that both friends and teachers have a significant effect on students' four-year college-going outlook, net of students who dropped out by the 10th grade. Specifically, students who thought their friends believed continuing school past high school was 'somewhat important' compared to 'not important' were 56.5 percent more likely to attend a four-college following high school. Students', who believed their peers saw postsecondary schooling as 'very important' rather than not at all, were 145 percent more likely to enroll. For perceived teacher expectations of the student's success in school, based on a continuous scale from strongly disagree (0) to strongly agree (3), the likelihood of attending a four-year college incrementally increases by 22 percent for each level above strongly disagree. As for students who dropped out of high school by grade 10, their likelihood of enrolling in a four-year college after high school is 27 percent that of students who remained in school; a marked decrease in the likelihood compared to

[50] A dummy variable is also included for dropping out of high school because students identified as a drop out for the survey administered in the 10th grade were not ask about their teachers or peers educational expectations.

models predicting any college enrollment where dropouts were half as likely to continue school.

Although significant to the probability of attending a four-year college, measures of significant others' expectations and dropping out of high school in the 10th grade fail to account for any of the generational gaps relative to native whites or among ethno-generational groups in Table 5.6. The influence of significant others, like that of parents' protective efforts on their child's assimilation in Models 4 and 5, also fail to mediate the effects from the local environment (family, school, and neighborhood) on future four-year college enrollment. Overall, peer and teacher expectations are important to students' future decisions to enroll in a four-year college, but have little impact on other measures associated with segmented assimilation model, including those measuring selective assimilation.

Model 7 introduces student's own expectations, which are widely considered the product of parental and significant others' aspirations for upward mobility. Results show that student's 10th grade expectations for enrolling at a four-year college after high school are significant. Specifically, relative to students with no postsecondary expectations after high school, students who anticipate two-year college attendance are more than 2 times as likely to go to as four-year institution while students in the 10th grade who expect to enroll in a four-year college are almost 9 times more likely to do so. Students' expectations do appear to stem from parents and significant others as expectations for both are narrowed in Model 7, although only the effect from teachers is no longer significant.

The inclusion of student's expectations also account for several of the observed ethno-generational gaps. Compared to native whites in Table 5.5, for instance, differences are narrowed for newly arriving blacks, and only marginally significant at the $p < 0.10$ level for Asian students of the second generation (odds advantage) and third and higher generations (odds disadvantage). For other ethnic groups, such as newly arriving other (non-Mexican) Hispanics and long-term resident blacks, net differences relative to native whites are no longer significant controlling for students'

college expectations. As for intra-ethnic differences in Table 5.6, only the gap between newly arriving and established other (non-Mexican) Hispanics is explained by the introduction of student's expectations. The remaining differences observed among blacks and Asians, while narrowing slightly in some comparisons from Model 6 to 7, continue to be statistically significant. The mediating effects of student's expectations on generational differences in educational attainment are remarkably similar to those found for four- year enrollment in Chapter 4 where only the difference between other (non-Mexican) Hispanics of foreign and native parentage was closed and remaining gaps among groups narrowed. While the effects for parental and student expectations offer limited support consistent with such theories as the Optimism Hypothesis, the positive impact of significant others expectations is at least partially in accordance with the segmented assimilation theory. Nevertheless, measures used to test the segmented assimilation theory in this analysis fail to fully explain differences in four-year enrollment between and within ethno-generation groups where significant gaps among groups persist.

In fact, despite adding controls in Model 8 for student's prior academic achievement, cognitive ability in reading and math, and self-efficacy (all positive and statistically significant), inter- and intra-ethnic differences remain largely unchanged from Model 7. The effects for native blacks and recent non-Mexican Hispanic immigrants in Table 5.5 are exceptions where, controlling for prior achievement and ability, both groups once again have a net advantage relative to native whites (differences previously explained by student expectations in Model 7). The intra-ethnic gap in Table 5.6 between new and established other Hispanic immigrants is also once again statistical significant in favor of recent arrivals. The only comparison that is accounted for by measures of achievement and ability is the continued net disadvantage of American Indian/Alaska Natives relative to long-term resident whites. Given the long history of economic deprivation and limited access to quality primary and secondary education among African Americans and particularly Native American groups, it is reasonable that academic achievement has such an important impact on

four-year college-going net of family background, the local contextual environment, and self-, parental, and significant others' expectations. Because other (non-Mexican) Hispanic immigrants represent a diversity of national origins, the effect of prior achievement is more difficult to explain. Given the relatively large magnitude of the effect for other Hispanics odds of four-year college going, it may be that adding student's expectations without controlling for achievement creates too much noise to detect ethnic differences for this small sample size subgroup.

Future research examining immigrant differences in educational attainment should consider adding student's prior achievement earlier in the model equation. In Figure 5.1, for instance, student's mental ability is conceptualized as predetermined (the result of genetics and environmental influences) from which such capacities then affect academic achievement. By adding measures of student's prior achievement sooner, researchers will be better equipped to untangle the effect of early school success on differences in immigrants' future college prospects as well as the mediating effects of parental expectations and protective influences and the role of significant others. Results of the current analysis show, net of prior academic achievement in Model 8, that parents' expectations that their child will continue education after high school and limitations on television watching are no longer statistically significant. Similarly, teachers expectations fail to reach statistical significance in Model 8, however, the importance peers place on going onto college and student's own expectations remain significant though lesser in magnitude. In other words, these results suggest that student's prior achievement, cognitive ability, and self-efficacy inform or otherwise color parents' and significant others' perceptions of how far students will go in school. Popular theories of immigrant assimilation tested here, up until now, have dealt with student's achievement as the outcome to be explained, rather than an input for predicting future educational attainment. Although beyond the scope of the current analysis, further research is needed to assess how prior achievement impacts the predicted causal relationship that underlie commonly held theories of assimilation, such as the straight-line theory, Optimism hypothesis, and Segmented Assimilation theory.

Overall, based on the results for four-year college enrollment, evidence suggests modest support for the segmented assimilation model, particularly the mediating effects of selective acculturation among recent Mexican immigrant students. Specifically, instead of parents protecting their child from negative influences in the local environment, results suggest that homeland differences in the humbleness of immigrant's national origins mattered more in this analysis. Measured interaction effects between ethno-generational status and contextual environment, however, were not significant factors for student's four-year college-going behavior despite contextual measures having significant independent effects. The pattern of findings also shows some evidence in favor of the Optimism Hypothesis with the narrowing advantage of the second-generation in response to parental and students' expectations, although the importance of significant others and especially peers' college expectations is consistent with the segmented assimilation.

Taken together, findings for four-year college enrollments offer the greatest body of evidence in this chapter thus far for the segmented assimilation theory. Despite support for certain elements of the segmented theory, significant gaps in college enrollment remain between and within ethno-generational groups. Even after controlling for student's prior school achievement and ability in the fully specified model, inter-ethnic differences relative to native whites in Table 5.5 remain for 1.5-generation Asians, black and other (non-Mexican) Hispanics students with foreign-born parents, and long-term resident blacks. Significant intra-ethnic gaps persist in Table 5.6 as well where students with a foreign-born parent of Asian, non-Mexican Hispanic, or African descent maintain an enrollment advantage over their native-born peers. Thus, foreign parentage remains a significant advantage in the likelihood of four-year college enrollment for several ethnic groups, net of measures operationalizing the segmented assimilation theory. We now turn to results testing the segmented theory against a more stringent definition of educational attainment; the likelihood of 8th grade students completing college by attaining a bachelor's degree or higher.

Table 5.5. Logistic Regression Predicting Four-Year College Enrollment under Segmented Assimilation Theory (Odds Ratio)

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Contextual Environment								
Family Composition								
Biological Parents		—	—	—	—	—	—	—
Stepparents		0.610***	0.613***	0.620***	0.620***	0.704**	0.742*	0.782†
Single parents		0.818*	0.821*	0.841†	0.841†	0.914	0.957	1.063
Other		0.229**	0.236**	0.244**	0.242**	0.338***	0.380**	0.464**
Number of siblings		0.922***	0.933***	0.927***	0.927***	0.927***	0.957*	0.947*
School Environment								
Public School		0.562***	0.582***	0.601***	0.603***	0.643**	0.649**	0.682*
Urbanicity								
Urban		—	—	—	—	—	—	—
Suburban		1.007	1.017	1.026	1.025	1.024	1.103	1.055
Rural		1.039	1.043	1.063	1.062	1.026	1.101	1.018
Percent receiving free lunch		0.996	0.997	0.997	0.997	0.996†	0.997	0.997
Neighborhood								
Percent same race/ethnicity in neighborhood		1.008***	1.008***	1.008***	1.008***	1.008***	1.008***	1.008**
Individual Level Factors								
Ethno-Generational Status								
1.5 generation								
White	1.680	1.974	1.886	1.734	1.719	1.498	1.637	1.860
Black - 1.5/2nd generation	4.128**	5.339***	4.525**	3.848**	3.775**	5.908*	4.458*	6.739**
Asian	2.436*	3.984**	4.176**	3.493*	3.482**	2.869*	2.877**	3.026**
Mexican	0.811	1.127	0.959	0.734	0.793	0.736	0.862	1.086
Other Hispanic - 1.5/2nd generation	3.103*	4.126***	3.678**	2.847**	2.856**	2.597*	2.085	2.886*

Unweighted N = 10,161

(Continued)

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.5. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Ethno-Generational Status								
2nd generation								
White	1.339	1.419†	1.406†	1.347†	1.328	1.335†	1.306	1.254
Asian	1.967*	2.983***	2.973***	2.504**	2.458*	2.297**	1.727†	1.717†
Mexican	1.498*	1.935**	1.748*	1.331	1.407	1.402	1.344	1.597†
3rd plus generation								
White	—	—	—	—	—	—	—	—
Black	1.216	1.651**	1.435*	1.443*	1.442*	1.330*	1.181	1.854***
American Indian/Alaska Native	0.406***	0.555*	0.512**	0.577*	0.571*	0.507**	0.499*	0.753
Asian	0.486**	0.552*	0.555*	0.559*	0.563*	0.544*	0.663†	0.718
Mexican	0.752	1.105	1.009	0.921	0.938	0.901	0.850	1.093
Other Hispanic	0.709	0.844	0.842	0.807	0.806	0.789	0.846	0.973
Puerto Rican	1.260	1.970*	1.978*	1.479	1.501	1.592	1.592	1.729
1.5 generation schooled outside U.S.	1.852*	1.933*	1.922*	1.846†	1.834†	2.289*	1.750†	1.458
Female	1.201**	1.213**	1.224**	1.233**	1.232**	1.150*	1.048	0.978
SES index measure	1.162***	1.152***	1.133***	1.131***	1.131***	1.126***	1.105***	1.090***
Parents' School Expectations/Valuation								
Child to continue education after high school			3.575***	3.497***	3.496***	3.004***	2.100**	1.394
College savings			1.137†	1.142†	1.141†	1.151†	1.041	1.027
Talk to child about school (index: 0-3)			1.303***	1.286***	1.284***	1.245**	1.192*	1.209*
Selective Assimilation								
Home language other than English				0.838	0.850	0.858	0.817	0.912
Understand other language (index: 0-4)				1.131†	1.156*	1.150*	1.149†	1.100
Limited English Proficiency				0.822	0.851	0.817	0.884	1.180
Parents limit television (index: 0-3)				1.172***	1.172***	1.133***	1.088*	1.082†
Parents limit friends (index: 0-3)				1.007	1.006	1.005	1.009	0.975

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

(Continued)

Table 5.5. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Interaction with Similar Others								
Language with Neighborhood friends (index: 0-3)					0.984	0.995	1.018	0.999
Language with School friends (index: 0-3)					0.908	0.923	1.002	1.087
Influence of Significant Others								
Dropout of high school by grade 10						0.273***	0.270*	0.524
Teacher Expectations (index: 0-3)						1.221**	1.118†	1.064
Peers College Expectations (index: 0-2)						1.565***	1.209**	1.293***
Student's Educational Expectations (10th grade)								
High school or less							—	—
Two-year or vocational college							2.206***	1.877**
Four-year college or higher							8.817***	4.761***
Prior Achievement and Ability								
Average grades (4.0 scale)								1.895***
Reading test								1.021**
Math test								1.040***
Self efficacy (NELS created variable)								1.185**
Intercept	0.979	1.177	0.168***	0.139***	0.137***	0.067***	0.038***	0.001***
Model Fit Statistics (Average)								
AIC	11503.220	11193.920	10952.900	10904.890	10906.170	10497.570	9666.170	8868.060
-2 log-likelihood	11467.220	11139.920	10892.900	10834.890	10832.170	10417.570	9582.170	8776.060
Degrees of freedom	18	27	30	35	37	40	42	46
Log likelihood ratio test		327.300***	247.020***	58.010***	2.720	414.600***	835.400***	806.110***
Additional degrees of freedom		9	3	5	2	3	2	4

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.6. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Four-Year College Enrollment

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
White generation 1.5 - generation 2	0.341	0.555	0.480	0.387	0.391	0.163	0.331	0.606
White generation 1.5 - generation 3	1.680	1.974	1.886	1.734	1.719	1.498	1.637	1.860
White generation 2 - generation 3	1.339	1.419†	1.406†	1.347†	1.328	1.335†	1.306	1.254
Black generation 1.5 & 2 - generation 3	2.912*	3.688*	3.090*	2.405*	2.333*	4.578*	3.277*	4.885*
Asian generation 1.5 - generation 2	0.469	1.001	1.203	0.989	1.024	0.572	1.150	1.309
Asian generation 1.5 - generation 3	1.950***	3.432***	3.621***	2.934***	2.919**	2.325**	2.214***	2.308***
Asian generation 2 - generation 3	1.481***	2.431***	2.418***	1.945***	1.895***	1.753***	1.064*	0.999*
Mexican generation 1.5 - generation 2	-0.687	-0.808	-0.789	-0.597	-0.614	-0.666	-0.482	-0.511
Mexican generation 1.5 - generation 3	0.059	0.022	-0.050	-0.187	-0.145	-0.165	0.012	-0.007
Mexican generation 2 - generation 3	0.746**	0.830*	0.739*	0.410	0.469	0.501†	0.494	0.504
Other Hispanic generation 1.5 & 2 - generation 3	2.394**	3.282**	2.836**	2.040*	2.050*	1.808*	1.239	1.913*

†p <0.10; *p <0.05; **p <0.01; ***p <0.001

Bachelor's Degree or Higher

Results evaluating the segmented assimilation theory using college graduation with a bachelor's degree or higher are in Table 5.7. Following the models for students' college enrollment (any postsecondary and four-year), baseline Model 1 of the segmented assimilation theory takes the functional form of the conventional assimilation theory wherein in addition to socio-demographic factors of schooling outside the U.S. for 1.5-generation immigrants and gender, generational differences are presumed the result of family socioeconomic background. Recall from Chapter 4 (see Model 2 in Table 4.8) that the addition of family background accounts for the lesser odds of completing a four-year college degree relative to three-plus generation white for third generation blacks, 1.5 and second generation Mexicans, and Puerto Ricans. Only in the case of 1.5-generation whites is an odds advantage accounted for by socioeconomic status. Differences among ethnic groups narrow slightly between generations with only the gap between 1.5 and third generation whites no longer significantly different.

Shown in Model 1 of Tables 5.7 and 5.8 are the inter- and intra-ethnic differences that remain among generational groups net of family background. Groups that remain significantly different from native whites in Table 5.7 include the relative *advantage* of 1.5- and second-generation Asians (odds 2.001 and 2.176 times greater respectively), second generation whites (1.611 times), and other (non-Mexican) Hispanics of foreign parentage (1.993 times). At an odds *disadvantage* relative to native whites for college completion include American Indians and three-plus generation Mexicans and Asians (odds of 0.367, 0.362, and 0.424 that of whites). Intra-ethnic differences controlling for family background are available in Table 5.8. Consistent with the enrollment models examined above and tested in Chapter 4 as part of the Optimism Hypothesis, the odds of college graduation among ethnic white, Asian, and Mexican immigrants show the characteristic pattern of the second-generation advantage (differences in the odds of 1.661, 1.752, and 0.954 respectively). Asians and

other Hispanics of foreign parentage are also found to have higher odds of college graduation compared to their three-plus generation ethnic peers (1.577 and 1.269). The subsequent models in this analysis seek to explain these lingering generational differences in a manner consistent with the segmented assimilation theory.

Model 2 inserts variables to contextualize the early social and educational conditions that inform student's college success, a key element of the segmented assimilation thought to differentially impact generational trajectories. Results in Table 5.7 show that all the measures at all three contextual levels of family, school, and neighborhood are statistically significant on college graduation. At the family composition level, introduced to capture the availability of family resources for postsecondary schooling, the pattern of findings highlight the costliness of not only enrolling in a four-year college (see Model 2 of Table 5.5), but the long-term financial commitment associated with completing a four-year degree. Specifically, results for parental composition show that students living in a single parent household, a stepparent, or other relative are 56%, 44% and 19% as likely as students who live with two biological parents to graduate from college. Similarly, students who have more siblings have lower odds of completing college than students with fewer or no siblings (odds decline by roughly 20 percent for every addition sibling). Thus, in addition to the advantages of having a fortunate family background, the availability of family resources for college is also an important factor for whether students finish college.

As is the case in the four-year college enrollment model, the student's secondary school environment (middle or high school) also has consequences for completing college. Students who attend a public school in 8th grade, for instance, are about half as likely (55.4 percent) to finish college as students who went to a private school. While students' secondary school type similarly mattered for the odds of enrolling at a four-year college, the urbanicity and poverty level of the school did not have a significant effect on college-going. For graduation with a bachelor's degree or higher, however, these factors are statistically significant. For example, a 10 percent increase in the percentage of students in a school receiving free or reduced lunch lessens, on average, a

student's odds of finishing college by 5 percent. Relative to urban schools, students attending schools in suburban or rural schools are, respectively, 25 and 60 percent more likely to graduate college. Finally, at the neighborhood level, living in a more ethnically/racially similar community (i.e., higher percentage of co-ethnics in a neighborhood) improved student's odds of college completion.

While contextual factors examined in this analysis all prove significant for college graduation, their inclusion in the model equation explains none of the ethnic differences detected among immigrant generations relative to three-plus generation whites in Table 5.7 or within ethnic groups in Table 5.8. In fact, the lack of narrowing among ethnic groups follows suit with the pattern of results observed in the model tests using any postsecondary and four-year enrollment where environmental conditions also fail to mediate immigrant differences. Only in the case of second-generation students of Mexican descent is a changed detected; going from parity with native whites in Model 1 where socioeconomic background accounts for a net disadvantage (see Chapter 4) to a net advantage in Table 5.7 controlling for socioeconomic background and environmental factors in Model 2. A similar phenomenon is observed for four-year college enrollment for native black and Puerto Rican students. Akin to the depressed odds of four-year enrollment among long-term ethnic minority groups, second-generation Mexican adolescents are a resilient group as measured by their college completion rate. Specifically, second-generation Mexicans have statistically equivalent odds of finishing college to that of native whites, net of family socioeconomic background, despite an upbringing in a more socially and economically disadvantaged environment. Accounting for both socioeconomic background and the contextual environment at the family, school, and neighborhood level, second-generation Mexican students are nearly 2 times as likely as native whites to graduate with a bachelor's degree or higher.

A test of the interaction effects between ethno-generations and the environmental context (school poverty and neighborhood ethnicity), a fundamental element of the segmented assimilation theory, fails to deliver as a significant factor.

Following the analyses for the college enrollment models, interactions between ethno-generational groups and the environment fail to reach statistical significance or improve the overall model fit. Although the featured ingredient of the segmented theory as formulated in this dissertation (refer to Hypotheses C1.1 and C1.2), the interactions are omitted from the model equation – as done for the enrollment models – as their inclusion obscures the effects for the remaining factors associated with the theory.

Discussed elsewhere, future research on how immigrants' differential rates of mobility vary depending on the structural environment might consider other courses of investigation, such as exploring other school and neighborhood measures or entirely different environmental levels. Another approach is to create discrete environmental categories – such as low, medium, and high percentages – to operationalize school poverty and neighborhood ethnic composition rather than keeping these environmental measures at a continuous scale, as implemented in this analysis. A drawback to creating discrete categories, however, is that the number of interaction terms is multiplied by the number of environmental categories. In the current analysis, for instance, rather than 14 ethno-generational x school poverty interactions, a 3-category contextual measure increases the number of terms to 42. Given the well-documented issue of small subsamples of ethno-generational groups in this analysis, minimizing the number of model inputs becomes essential for model stability as degrees of freedom are at a premium. A method taken by Xie and Greenman's (2005) to circumvent this issue is to estimate models separately by each environmental condition (high and low neighborhood and school disadvantage), conceptualized as an exposure-based approach wherein immigrant children are differentially exposed to American culture in the local environment. Although their reformation and test of segmented assimilation theory estimates a total of 360 regression models across 2 ethnic groups, 10 measures of assimilation, and 9 outcomes, results using the Adolescent Health data produced little empirical evidence in support of the theory.[51] Nevertheless, modeling the immigrant experience as one unique to the contextual environment offers researchers a useful and

[51] Among the estimated models, less than 10 percent had significant results and of those, many were in a direction opposite from that predicted by the theory.

practical strategy for testing segmented assimilation, which by the theory's namesake, segments the sample of immigrants into different contextual intensities (e.g., high versus low socioeconomic environments).

Despite dropping interactions between ethno-generations and contextual environment from the empirical model, as done with the other attainment analyses, Model 3 includes measures of parents' expectations of their 8th graders future educational attainment. Portrayed in Figure 5.1, parents' expectations mediate generational and environmental differences in educational attainment and serve as a precondition to parents' protective influences over their child's educational future. Results show parents' expectations for continuing education after high school and saving for college, measured during student's 8th grade year, has a significant impact on the odds of finishing a bachelor's degree. Students whose parents had high expectations of their long-term educational attainment are 7 times more likely to graduate from a four-year college than are their peers whose parents have few educational expectations. Consistent with the other estimated attainment models of any college and four-year enrollment, measures of parents' expectations fail to mediated effects of the students' contextual environment during childhood. Generational differences in the odds of graduating college between and within ethnic groups, likewise, remain appreciably unchanged relative to native whites as well as for intra-ethnic comparisons in Table 5.6. Overall, results across all three empirical tests of the segmented assimilation theory show that parents' early educational expectations of their child, although statistically significant, fail to account for generational gaps in postsecondary educational attainment among and within ethnic groups.

Models 4 and 5 add variables for immigrants' selective assimilation, conceptualized in the reconciled model in Figure 5.1 as a part of the assimilation process rather than, as Portes and Zhou (1993) suggest, an outcome of the immigrant experience. In Model 4, measures of parents' protective influences over their child's acculturation through language maintenance and limiting television watching and time with friends largely fail to affect students' educational attainment of a bachelor's degree

or higher. In fact, only the effect for limited English proficiency in the 8th grade, which reduces a student's odds of graduating college by 60 percent, reaches significance. Results for parents' indirect influences over who their child interacts, measured by non-English language use with school and neighborhood friends (i.e., interactions with similar others) in Model 5 also fail to reach statistical significance.

In addition to the absence of any significant findings for parents' direct and indirect efforts to limit their child's acculturation into American society, generational differences between and within racial/ethnic groups remain virtually unchanged from Model 3 to Models 4 and 5. Native American students are the lone exception with their odds disadvantage now at parity with native white controlling for English proficiency and parents' protective influences beginning in Model 4. The mediating effect of parents' efforts to limit their child's acculturation among immigrants of Mexican descent for four-year college enrollment is *unsubstantiated* for bachelor's degree completion. Thus, while parents' protective influences are significant factors for college enrollment, the declining effects of parents' protective influences over their child's long-range educational attainment is consistent with early status attainment research. Specifically, Blau and Ducan (1967) found family influences over children's socioeconomic outcomes wane as children get older, becoming further removed from their childhood family unit over the life course (e.g., going off to college, entering the work force, and starting a family of their own). As children leave their parents' house and more detached from parents' direct influences, social origins are thought work indirectly through the expectancies of significant others as well as children's own developed expectations.

Model 6 introduces effects for significant others' influence, measured in student's 10th grade year by friends' and teacher's *perceived* encouragement to attend college after high school. Because students who dropped out of high school at the time of the grade 10 survey did not respond to questions about the educational expectations of teachers or peers, a dummy variable is added for high school dropout. Table 5.7 shows that all three measures captured for *the influence of significant others* are

significantly related to students' finishing college. As a quasi-evaluation of the model's validity, respondents identified as a high school dropout during their sophomore year are only 10 percent as likely as their enrolled peers to attend and complete a four-year college degree. Results showing a non-significant difference or worse, a positive effect for dropping out would raise serious concerns over the model's empirical integrity.

As for the effects of significant others in Table 5.7, students' perceived outlooks of their peers and teachers regarding academic achievement and success are found to increase the odds of completing a bachelor's degree or higher. Specifically, students who believed their friends valued schooling beyond high school as 'somewhat important' compared to 'not important' were almost 50 percent more likely to fishing a four-year degree. Students', who believed their peers valued postsecondary schooling as 'very important' rather than not at all, were 123 percent more likely get a bachelor's degree. For perceived teacher expectations of the student's success in school, applying a continuous scale from strongly disagree (0) to strongly agree (3), the likelihood of attending a four-year college incrementally increases by 27 percent for each level above strongly disagree.

Although significant to the odds of completing a degree at a four-year college, measures of significant others' expectations and dropping out of high school in the 10th grade in Model 6 fail to account for any of the generational gaps relative to native whites in Table 5.7 or among ethno-generational groups in Table 5.8. The influence of significant others, like that of parents' protective efforts on their child's assimilation in Models 4 and 5, also fail to mediate the effects from the local environment (family, school, and neighborhood) on future college completion. Overall and consistent with the enrollment models, peer and teacher expectations are important to students' future decisions to enroll in and graduate from college, but account for none of the differences between immigrants. Moreover, the addition of significant other's influence had no impact on other measures associated with segmented assimilation model, including those measuring selective assimilation, suggesting parents may have little direct influence over whom their child interacts with at school.

Considered by status attainment and assimilation theorists as the product of parental and significant others' aspirations for upward mobility, Model 7 introduces to the model equation student's own expectations for educational attainment. Results in Table 5.6 show that students' 10th grade expectations for going to college after high school, whether a 2-year or four-year and higher, have a significant affect on the odds of completing a bachelor's degree. Specifically, relative to students who report no postsecondary aspirations following high school, students who anticipate two-year college attendance are almost 4 times as likely graduate from a four-year institution. For students who expected to enroll in a four-year college, the odds of earning a bachelor's degree are almost 20 times more likely than students who expected a high school education or less. Consistent with theories of mobility and result for four-year enrollment, students' expectations do appear to arise from parents' and significant others' expectations as both are narrowed in Model 7, although only the effect of parents' saving for their child's college education is no longer significant.

Unlike the enrollment models, the addition of student's expectations at grade 10 is found to account for few of the generational differences observed between and among ethnic groups. In fact, student's expectations account for no more of the observed generational gaps in Table 5.7 and 5.8 than those found in Chapter Four's test of Optimism Hypothesis which excludes measures for the contextual environment and constructs for segmented assimilation theory and selective acculturation (see Model 4 in Tables 4.8 and 4.9). Specifically, only the disparities among other (non-Mexican) Hispanics of foreign parentage are accounted for net of student's expectations; where within group differences are explained in Chapter 5 (Table 5.8) and relative difference to native whites in Chapter 4 (Table 4.8). Otherwise, results in Table 5.7 show that nearly all the gaps observed in Model 1 relative to native whites persist across all the empirical models testing segmented assimilation theory.[52]

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[52] Only the net disadvantage between American Indian/Alaskan Natives and three-plus generation whites is account for in the bachelor's attainment model. The relative advantage for Asians and other (non-Mexican) Hispanics of foreign parentage and second-generation whites and Mexicans as well as the net disadvantage for three-plus generation Asians and Mexicans remain throughout with a slight narrowing in the odds ratios occurring by Model 7.

Intra-ethnic generational differences in Table 5.8 are similarly unchanged with the one exception noted above and again, the pattern of differences remains in concert with those in Chapter 4. The analytic models in both chapters, for instance, display the so-called second-generation edge pattern throughout for ethnic whites, Asians, and Mexicans relative to their third generation counterparts. Similarly, the advantage among Asians of both the 1.5- and second-generation relative to long-term residents remains statistically significant, although narrowing only slightly for the second-generation (a trend mildly consistent with Optimism Hypothesis). Even the peculiar emergence of a 1.5-generation Mexican advantage over their third-generation ethnic peers is apparent in both empirical analyses. In both empirical tests, it can be concluded that results for four-year college completion show little support for either the Segmented Assimilation or Optimism theory to explaining generational differences.

Taking the test of the Segmented Assimilation theory one-step further, Model 8 introduces measures for student's prior academic achievement, cognitive ability in reading and math, and self-efficacy. Unlike the four-year college enrollment model, only three out of four measures are statistically significant with student's self-efficacy not found to impact the odds of finishing college. Prior achievement and cognitive ability, on the other hand, are associated with significant increases in the odds of finishing college, even when measured as early as the 8th grade. Similar to the four-year enrollment models, however, is how the effects of students' academic endowments impact inter- and intra-ethnic differences. Namely, observed differences between and within ethnic groups in Tables 5.7 and 5.8 are largely unchanged from Model 7—such stagnant results are also recorded for four-year enrollment. A change that does occur in both the four-year enrollment and graduation models are the emergence of a net advantage relative to native whites for native blacks and other (non-Mexican) Hispanic immigrants. The only comparison that is accounted for by measures of achievement and ability for both modeled outcomes is the net disadvantage of American Indian/Alaskan Natives relative to long-term resident whites.

Results for the attainment of a bachelor's degree or higher once again show that measures of student's prior achievement and ability are important factors for understanding the intricate web of relationships that produces different educational trajectories among immigrant youth. Whereas the impact of prior achievement on student's odds of four-year college-going served to account for parents' and teacher's expectations, findings for college completion in Table 5.7 show that prior achievement accounts for about half the effect of student's own expectations; decreasing from nearly 20 times the odds of a student with no college aspirations in Model 7 to a likelihood of almost 10 times in Model 8. Thus, while students' prior achievements and cognitive capacities inform parents' and significant others' perceptions as to the likelihood of *enrolling* in four-year college, the same inputs account for students' expectations on the odds of attaining a bachelor's degree or higher. These results offers further support for status attainment perspective that as children get older, parents direct effects over their child's socioeconomic outcome declines. For students on the cusp of entering college, parents' expectations of their child's educational future – formed (directly and/or indirectly) by their child's previous school accolades and abilities – matter for the odds of going to college. Once in college, however, students must rely on their own academic talents to succeed and eventually graduate—the same raw abilities that bolstered their educational expectations back in the 8th grade. These results should serve as a call to assimilation researchers to further examine how prior school success and abilities impact the causal relationship that underlie popular theories of immigrant socioeconomic integration, such as the straight-line theory, optimism hypothesis, and segmented assimilation theory.

Results testing the segmented assimilation theory using bachelor's degree completion or higher offer little evidence in favor of the theory's major tenets. Overall, generational differences remain empirically static regardless of which mediating effect fundamental to segmented theory was entered into the model equation. Under close scrutiny and consistent with conclusions drawn for any postsecondary enrollment, the results suggest that expectations better explain immigrant patterns of incorporation than

the contextual environment and selective acculturation offered by the segmented assimilation theory. Although early contextual environments influence students' odds of graduating with bachelor's degree, differential rates among immigrants did not depend on the family, school, or neighborhood environments as measured in this analysis. Moreover, measures of selective acculturation generally failed to affect the likelihood of students' graduating from college or in narrowing generational differences. In line with the theory, however, is the influence of peers and teachers (significant others) on future college completion, which remain significant net of students' own educational expectations and, in the case of peers, prior achievement.

Table 5.7. Logistic Regression Predicting Bachelor's Degree or Higher under Segmented Assimilation Theory (Odds Ratio)

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Contextual Environment								
Family Composition								
Biological Parents		–	–	–	–	–	–	–
Stepparents		0.444***	0.446***	0.446***	0.446***	0.495***	0.513***	0.531***
Single parents		0.563***	0.569***	0.571***	0.573***	0.605***	0.616***	0.686***
Other		0.193***	0.202***	0.206***	0.203***	0.309***	0.325**	0.436**
Number of siblings		0.861***	0.871***	0.870***	0.869***	0.868***	0.895***	0.888***
School Environment								
Public School		0.554***	0.557***	0.561***	0.560***	0.587***	0.585***	0.604***
Urbanicity								
Urban		–	–	–	–	–	–	–
Suburban		1.249*	1.255*	1.264*	1.262*	1.272*	1.395**	1.275*
Rural		1.560***	1.559***	1.573***	1.568***	1.491**	1.607***	1.435**
Percent receiving free lunch		0.995*	0.995*	0.996†	0.996†	0.995*	0.996†	0.995*
Neighborhood								
Percent same race/ethnicity in neighborhood		1.004**	1.004**	1.003*	1.004**	1.003**	1.002	1.002
Individual Level Factors								
Ethno-Generational Status								
1.5 generation								
White	1.493	1.388	1.525	1.561	1.517	1.416	1.474	1.346
Black - 1.5/2nd generation	1.131	1.754	1.488	1.465	1.428	1.741	1.516	2.112*
Asian	2.001*	2.512*	2.467*	2.724**	2.693**	2.384*	2.609***	2.493**
Mexican	0.735	1.170	1.001	1.096	1.218	1.118	1.453	2.137†
Other Hispanic - 1.5/2nd generation	1.993*	2.715***	2.534***	2.702***	2.732***	2.407**	1.906*	2.628**

Unweighted N = 10,161

(Continued)

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.7. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Ethno-Generational Status								
2nd generation								
White	1.611***	1.598**	1.587**	1.654**	1.624**	1.608**	1.607**	1.694**
Asian	2.176**	2.594***	2.509***	2.634***	2.563***	2.416**	1.875*	1.814*
Mexican	1.316	1.883**	1.761*	1.817*	1.934*	1.839*	1.834*	2.537**
3rd plus generation								
White	—	—	—	—	—	—	—	—
Black	0.797	1.243	1.123	1.117	1.113	1.053	0.962	1.453*
American Indian/Alaska Native	0.367**	0.483*	0.443**	0.656	0.642	0.595	0.600	0.857
Asian	0.424***	0.422**	0.419**	0.428**	0.428**	0.409**	0.561*	0.664
Mexican	0.362***	0.584**	0.541**	0.576**	0.581**	0.531**	0.489***	0.570*
Other Hispanic	0.724	0.829	0.816	0.834	0.827	0.825	0.951	1.189
Puerto Rican	0.609	1.091	1.094	1.213	1.227	1.307	1.116	1.534
1.5 generation schooled outside U.S.	1.814*	2.034*	2.100*	2.169*	2.147*	2.412**	1.962**	1.770*
Female	1.546***	1.570***	1.584***	1.588***	1.587***	1.503***	1.438***	1.296***
SES index measure	1.168***	1.153***	1.137***	1.136***	1.136***	1.131***	1.107***	1.091***
Parents' School Expectations/Valuation								
Child to continue education after high school			5.688***	5.684***	5.693***	5.070***	3.315***	2.044**
College savings			1.227**	1.226**	1.226**	1.228**	1.145†	1.172*
Talk to child about school (index: 0-3)			1.101	1.094	1.093	1.049	0.986	0.949
Selective Assimilation								
Home language other than English				0.803	0.815	0.823	0.767	0.788
Understand other language (index: 0-4)				1.048	1.077	1.073	1.084	1.041
Limited English Proficiency				0.399**	0.418**	0.361**	0.355**	0.465*
Parents limit television (index: 0-3)				1.069†	1.068†	1.036	0.989	0.978
Parents limit friends (index: 0-3)				1.001	1.001	1.000	1.019	0.996

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

(Continued)

Table 5.7. Continued

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
Individual Level Factors								
Interaction with Similar Others								
Language with Neighborhood friends (index: 0-3)					1.024	1.032	1.076	1.041
Language with School friends (index: 0-3)					0.836	0.849	0.894	0.956
Influence of Significant Others								
Dropout of high school by grade 10						0.098***	0.101**	0.250*
Teacher Expectations (index: 0-3)						1.277***	1.181***	1.096†
Peers College Expectations (index: 0-2)						1.494***	1.169*	1.228***
Student's Educational Expectations (10th grade)								
High school or less							—	—
Two-year or vocational college							3.864***	3.108***
Four-year college or higher							19.979***	9.773***
Prior Achievement and Ability								
Average grades (4.0 scale)								2.675***
Reading test								1.011*
Math test								1.030***
Self efficacy (NELS created variable)								0.997
Intercept	0.296***	0.527†	0.071***	0.068***	0.067***	0.035***	0.009***	0.000***
Model Fit Statistics (Average)								
AIC	10142.480	9727.870	9559.560	9547.950	9548.180	9282.550	8548.570	7768.940
-2 log-likelihood	10106.480	9673.870	9495.560	9473.950	9470.180	9198.550	8460.570	7672.940
Degrees of freedom	18	27	30	35	37	40	42	46
Log likelihood ratio test		432.610***	178.310***	21.610***	3.770	271.630***	737.980***	787.630***
Additional degrees of freedom		9	3	5	2	3	2	4

Unweighted N = 10,161

† p <0.10, *p <0.05, **p <0.01, ***p <0.001

Table 5.8. Intra-Ethnic Generational Differences in the Odds Ratio Coefficients for Bachelor's Degree or Higher

	Conventional Assimilation	Segmented Assimilation						Fully Specified
	I	II	III	IV	V	VI	VII	VIII
White generation 1.5 - generation 2	-0.118	-0.210	-0.062	-0.093	-0.107	-0.192	-0.133	-0.348
White generation 1.5 - generation 3	1.493	1.388	1.525	1.561	1.517	1.416	1.474	1.346
White generation 2 - generation 3	1.611***	1.598**	1.587**	1.654**	1.624**	1.608**	1.607**	1.694**
Black generation 1.5 & 2 - generation 3	0.334	0.511	0.365	0.348	0.315	0.688	0.554	0.659
Asian generation 1.5 - generation 2	-0.175	-0.082	-0.042	0.090	0.130	-0.032	0.734	0.679
Asian generation 1.5 - generation 3	1.577***	2.090***	2.048***	2.296***	2.265***	1.975**	2.048***	1.829***
Asian generation 2 - generation 3	1.752***	2.172***	2.090***	2.206***	2.135***	2.007***	1.314**	1.150**
Mexican generation 1.5 - generation 2	-0.581	-0.713	-0.760	-0.721	-0.716	-0.721	-0.381	-0.400
Mexican generation 1.5 - generation 3	0.373†	0.586	0.460	0.520	0.637	0.587†	0.964*	1.567**
Mexican generation 2 - generation 3	0.954***	1.299***	1.220***	1.241***	1.353***	1.308***	1.345***	1.967***
Other Hispanic generation 1.5 & 2 - generation 3	1.269*	1.886**	1.718*	1.868*	1.905**	1.582*	0.955	1.439†

†p <0.10; *p <0.05; **p <0.01; ***p <0.001

Conclusion

The investigation of the segmented assimilation theory in this chapter began with the basic idea that popular theories of immigrant assimilation, often treated as oppositional in the literature, are better conceptualized as part of a single integrated model. While Chapter 4 examined a reduced-form model reconciling the conventional assimilation and optimism hypothesis, socioeconomic background and parental and student expectations failed to account for many of the ethno-generational status differences in educational attainment. Seeking to explain these remaining generational gaps, this chapter focused on the fully reconciled model of immigrant assimilation in Figure 5.1 and the mechanisms that underlie the segmented theory. Specifically, in addition to family background and expectations, this analysis set out to examine the role of structural background (i.e., family structure, school environment, and neighborhood composition), parents' protective influences over their child (i.e., selective acculturation), and the influence of significant others (i.e., peers and teacher) on generational disparities in college enrollment and bachelor's degree completion. To do so I reexamine the NELS sample of 8th graders used for Chapter 4 and once again estimate separate logistic models for any college enrollment, four-year college enrollment, and bachelors' degree completion or higher. The analyses show that although several features of the segmented assimilation theory significantly affect the odds of college enrollment and completion, the ability of the theory to explain generational status differences is underwhelming given its complex specification.

Results for the segmented assimilation model substantiate the theory's emphasis of the contextual environment and the conversion of parental influences into children's educational mobility by way of significant others and children's own expectations. For instance, the contextual environment during adolescence as measured by family structure, secondary school environment, and neighborhood ethnic composition is clearly associated with college-going and completion. Findings fail to support, however, the foundational tenet that generational differences among immigrants are

explained by or depend on students' structural background. In other words, disparities in educational attainment by ethno-generational status are found to matter independently of the local environment in which students grew up. As a result, interaction effects tested between ethno-generational groups and school-level poverty and ethnic composition of students' neighborhood were taken out of the reported model equations. Results for the remaining causal mechanisms proposed by the segmented assimilation theory reveal a number of important findings.

First, the pattern of results show that parents' protective influences and active promotion of their child's selective assimilation may in fact result from the structural background of their national origins rather than that of the local environment. One of the theory's main contentions is that parents' protective influence over their child's acculturation is greatest in response to a disadvantaged environment. Having found no dependency of generational trajectories on the local environment, these interaction effects were removed from the model equation. However, the results for college enrollment, especially for four-year college attendance, show that parents' attempts to limited their child's assimilation into the American mainstream mediates the advantage of second-generation Mexicans relative to their ethnic and white counterparts of the third and higher generations. Thus, instead of parents' protecting their children from negative influences in the immediate school and neighborhood environments, findings here suggest that the hardships of immigrants' homelands may be equally as important. In the case of immigrants from Mexico, parents familiar with the impoverished conditions of their homeland may be more likely to keep their children away from distractions that would otherwise hinder school success. It is plausible too that second-generation youth are particularly susceptible to such diversionary activities (such as television and video games) given their greater familiarity with the English language and American culture compared to their 1.5-generation ethnic peers.

Although the mediating effect of parents' protective influences on second-generation Mexicans is most decisive in the four-year college enrollment model, there is good reason not to discount this finding as an anomaly. In fact, the collection of

measures used to test the reconciled model integrating the segmented assimilation theory with that of the conventional assimilation and optimism hypothesis had the greatest effects for predicting college enrollment. In the bachelor's degree and higher analysis, on the other hand, several model inputs and in particular parents' protective influences were not found to be significant factors. The relative strength of the results across the three outcome measures follows the *Goldilocks principle*, which states that events tend to fall within certain margins, rather than extremes.[53] Thus, seeking to predict the future educational attainment of ethnic and generational status groups in the 8th grade, the likelihood of any postsecondary education might be "too general" (hot) and bachelor's degree completion and higher too specific and removed from the measured traits 10 to 12 years earlier (cold), while estimation of four-year college enrollment appears to be "just right". These differences in the outcome measures remind us to be mindful of inherent limitations of the analytic sample. In the current investigation, the NELS panel data used in this investigation is of secondary students interviewed at a very particular time (1988) and place (8th grade).

While the test of optimism hypothesis in Chapter 4 highlighted the importance of parental and student's own educational expectations on the likelihood of school attainment, findings for the segmented assimilation theory show that teacher and peer expectations also influence college-going behavior and college completion. Specifically, results of this investigation also show that net of parental expectations, significant others' expectations and, in particular, peers' high regard for schooling beyond high school is associated with an increase in students' odds of college enrollment and graduation. Moreover, the pattern of results in all three attainment models show a successive decline in the effects for expectations where the introduction of significant others' beliefs measured in the 10th grade diminish the effect for parents who were interviewed at grade 8, and student's own aspirations (also evaluate at grade 10) lessens the influence of both parents and significant others. This trend lends support

[53] In the fairytale *Goldilocks and the Three Bears*, Goldilocks goes into the home of the three bears and finds three bowls of porridge, chairs, and beds that were either too hot or cold, too big or small, or too hard or soften. In each case, however, there was one item that was neither too hot nor too cold, but "just right".

to the theory's claim, and that of the status attainment perspective more generally, that parental expectations channel the types of significant others' their child encounters and that both ultimately shape children's own educational aspirations. Results show, however, that only the introduction of youths' expectations account for generational differences in educational attainment, particularly the odds advantage of any postsecondary school enrollment for second-generation white and Asian youth over their three-plus generation ethnic peers and intra-ethnic advantage among other (non-Mexican) Hispanics for four-year enrolment and bachelor's degree completion models. The importance of expectations over and above the other model inputs is more suggestive of the optimism theory than of the segmented assimilation theory investigated in this chapter.

Results from this analysis have some interesting implications for theory and research on immigrant assimilation. To the extent that this study operationalized the structural and individual level factors that underlie the segmented assimilation theory (contextual dependence and selective assimilation), measured gaps in educational attainment between and within ethno-generational status groups remain mostly unexplained. In fact, even the addition of students' prior school achievement and academic ability to the model, which were significant effects, failed to explain away any more of the generational disparities than that of the fully specified segmented assimilation model. Although the contextual environment of the family, school, and neighborhood during adolescence is associated with postsecondary educational attainment, generational differences remained independent of the environmental influences. Results also fail to support the theory's claim that parents' protective influences mediate effects of the immediate structural conditions. However, evidence was found that parental influences account for the disadvantaged background of immigrant's ancestral homeland where measures of selective assimilation account for the net advantage in college enrollment for second-generation Mexicans relative to their three-plus generation ethnic peers and native whites. Though modest, the relationship found between parents' invocation of selective assimilation and disadvantaged national

origins offers support for the segmented model. Further research is needed to understand what mechanisms influence such ethnically conditional adaption to the American environment beyond those measured in this analysis.

Chapter VI: Conclusion

The aim of this dissertation project was to assess how well immigrants from Asia and Latin America were assimilating to the American mainstream relative to historic streams of immigrants from Europe and whether their trajectory was consistent with popular theories of immigrant incorporation. Much has been made of the rate of incorporation among recent immigrants who are both more demographically diverse than previous waves of immigration from Europe and possess a greater range of potential for upward mobility. Given the perceptually seamless integration of immigrants from Asia into the American educational system, the debate has largely focused on immigration from Latin America and Mexico in particular. Several important findings emerge from this research project regarding the generational trajectories of different national origin groups over the twentieth century and the mechanisms that underlie their differential rates of incorporation as hypothesized by conventional assimilation theory, the optimism hypothesis, and the segmented assimilation theory.

Summary of Findings

Findings from this study center around four related questions. First, how do the educational career paths of immigrant and native populations change over time and across generations? Second, how do educational trajectories reflect patterns predicted by popular theories of immigrant assimilation? Third, what factors account for generational differences in educational attainment? Finally, to what extent and in what ways, does the importance of these factors vary for immigrants of different ethnic descent? Chapter 2 sought answers to the first two questions by using pooled IPUMS-CPS data from 1996-2009 to trace the differential rates of educational attainment over time, by national origin and generational status. After developing a common platform in the status attainment perspective for reconciling theories of assimilation into testable

hypotheses in Chapter three, Chapters 4 and 5 examined the last two questions using NELS:88/2000 panel data to determine which theorized relationships account for generational differences in educational attainment.

Observed trends in educational attainment by national origin and generational status in Chapter 2 yielded several discoveries. First, despite increasing rates of educational attainment across successive birth cohorts by national origin groups (and generations within groups), the rank order of groups remained remarkably stable over the century with greater attainment among Northwestern (NW) Europeans followed by South, Central, and Eastern (SCE) Europeans, Asian/Pacific Islanders, other (non-Mexican) Latin Americans, and finally Mexicans. The persistence of such hierarchical differences, to the extent that national origins are a proxy for variations in socioeconomic background, are consistent with Raftery and Hout's (1993) concept of Maximally Maintain Inequality (MMI) which contends that inequality remains as long as elites expand their educational participation as fast or faster than less-privileged groups. For instance, among birth cohorts early in the twentieth century, before attainment of a high school degree became widespread, the ethnic hierarchy is evident at each measured level of educational attainment (at least high school, some college, and bachelor's completion or higher). Predicted by the MMI theory, however, as high school completion rates reached "saturation" among NW Europeans (i.e., ethnic elites) by mid-century and enrollment at postsecondary institutions increased, inequalities also narrow for less-privileged ethnic groups but only at the level of a high school education. Thus, consistent with Raftery and Hout's theory, only when the privileged stratus has reached capacity at an educational level, will further expansion reduce inequalities for less privileged groups at that level. The rapid increase in the high school completion rates among Mexican generations is a keen example. Taken together, trends in Chapter 2 show that as the tide of educational expansion has risen over the century, all groups have experienced an increase in levels of educational attainment. Yet not all groups start at the same level nor are they all able to equally capitalize on new educational opportunities.

As for the research question of how generational trends correspond to hypothesized patterns of immigrant assimilation, differences in educational attainment are consistent with the second-generation immigrant advantage and segmented assimilation perspectives. Evidence of a second-generation advantage is in line with patterns observed among Latin American immigrants and, to a lesser extent, Asian immigrants. Specifically, both Mexican and non-Mexican Hispanics display clear and consistent evidence of the second-generation edge pattern throughout the century and for each measured level of educational attainment. The second-generation boost pattern of incorporation observed for contemporary Asian and Hispanic immigrants follows the same curvilinear assimilation trajectory as turn-of-the-century immigrants from SCE Europe. For Mexicans in particular, the second-generation quickly overcomes the depressed course charted by their first-generation peers. Thus, immigrants from Mexico, although greatly disadvantaged upon their arrival to the U.S., follow the same pattern of incorporation as other national origin groups and appear to be rapidly ascending to educational levels of more advantaged national origin groups.

In addition to a second-generation advantage pattern of assimilation, the observed trends are also consistent with segmented assimilation. Specifically, results show that immigrants from Asia and Europe assimilate to educational levels equal to or above that of the native white population. For Mexican and non-Mexican immigrants, the trajectory of assimilation is decidedly similar to the lower attainment rates of native blacks. The upward trajectory of immigrants from Europe and Asia, who are often described as having greater capacities for social mobility than immigrants from the Latin America and the Caribbean who have more humble social origins, is consistent with the segmented theory. In fact, trends over the 20th century show that first-generation newcomers from Europe and Asia arrive with attainment rates already in excess of native blacks and often at parity with native whites for all three measured levels of education (i.e., high selective immigrant). For immigrants of Mexican heritage, on the other hand, rates of educational attainment begin excessively below all other ethnic and generational status groups (i.e., low selectivity), but reach parity with native

blacks by the second generation and remain steady for later generation. Whereas Mexican immigrants' trajectory is upward, other non-Mexican Hispanic immigrants appear to follow a downward path as members of the second-generation consistently have educational rates at or above those of native whites yet third and higher generations have rates resembling those of the native black population. Although the ethnic identify of third-plus generations becomes less distinct as inter-ethnic marriage increases, such inter- and intra-ethnic trends are consistent with those described by segmented assimilation approach where some groups are less favorably received than others. Thus, results indicate that the second-generation edge pattern occurs within a segmented-assimilation framework.

Testing the reconciled model of immigrant assimilation developed in Chapter three, Chapters 4 and 5 examined the last two questions using NELS:88/2000 panel data to determine which theorized relationships account for generational differences in educational attainment. Similar to the generational trajectories examined in Chapter 2 using the IPUMS-CPS, the educational attainment differences in the NELS sample were much greater across generations when viewed within ethnic groups than aggregated by generational status alone. Moreover, intra-ethnic differences show that 1.5 and second generation immigrant groups have a net advantage relative to the third and higher generations in terms of both access to postsecondary education and completion of a bachelor's degree. Although ethnic and generational status trends for postsecondary educational attainment are similar between the two data sources examined (see Appendix D), true subgroup rates are elusive especially for nationally representative and longitudinal data sets such as the NELS, which rely on smaller samples sizes and must track participants' progress over time and geographically. Despite the minor differences observed (isolated mostly the three-plus generation Asians), point estimates highlight the value of studying generational differences explicitly by ethnic group.

Given the intricacies of the assimilation theories tested in this dissertation project, it follows that regression results investigating the mechanisms that underlie generational differences in the NELS data are also complex. While the theoretical

mechanisms were themselves important for the verification of the assimilation perspectives, substantiation of each theory rested largely on whether mechanisms accounted for, or at minimum narrowed, generational differences at three levels of educational attainment (any college, four-year enrollment, and bachelor's completion). Changes in the educational attainment gaps between ethnic and generational status group were assessed relative to three-plus generation native whites as well as differences within ethnic group.

Results in Chapter 4 showed modest support for both conventional assimilation theory and optimism hypothesis, although neither theory was able to fully account for differences between generations. Consistent with the conventional model, for instance, socioeconomic background is a key factor directly affecting the odds of college enrollment and graduation with a bachelor's degree and as a mediator of ethnic disadvantage. Generational differences in attainment relative to the native white population, however, remained largely intact net of controls for family background with the exception of youth of Mexican ancestry and historically disadvantaged minorities of third and later generations (e.g., blacks and Native Americans). Similarly, intra-ethnic differences were also unchanged in most cases with the exception of ethnic whites and 1.5 generation Mexicans relative to their long-term resident ethnic peers. Overall, results showed that the mediating effect of family background on ethno-generational differences varies by attainment outcome with the greatest impact occurring for four-year college attendance. Given the greater costs that accompany enrollment at a four-year institution versus two-year college, it is reasonable that parental resources have the greatest affect at this postsecondary transition. In sum, findings for the conventional model affirm that family background is directly associated with postsecondary attainment but falls short of accounting for generational differences.

The pattern of findings in Chapter 4 was most consistent with the optimism hypothesis. Generational differences in the rates of educational attainment among ethnic groups clearly showed that 1.5 and second generation students have a net advantage compared to their three-plus generation ethnic counterparts. This intra-ethnic

ordering is in line with the theory's presumption of second-generation advantage pattern, which was observed cross-sectionally among ethnic whites, Asians, and Mexicans. For students of Mexican ancestry in particular, a second-generation edge pattern emerged only after family background was controlled, suggesting that capital resources play an important role in the postsecondary educational attainment for immigrants arriving from Mexico. Without controls for socioeconomic background, rates across generations among Mexican youth followed an upward trajectory described by the conventional theory.

Results also lend support for the theory's key mechanism of family expectations (parents and child) which were found to directly affect the likelihood of college going and completion. Student's own educational aspirations, which had the greatest impact on their educational outcomes, mediated much of the effect of parents' expectations signifying that children may in fact "inherit" their parents' outlook for social mobility as the theory predicts. Regression results indicate, moreover, that parental and student expectations do explain some immigrant differences for certain intra-ethnic comparisons and educational outcomes. In the any college models, for instance, parental expectations mediate the second-generation advantage among Mexicans while the addition of student expectations accounted for the gap between second and three-plus generation Asian youth. Results showed that the effect of expectations to mediate generational differences diminished as the level of attainment became more restrictive. In fact, while only modest narrowing was observed in the four-year enrollment model, results for bachelor's degree completion failed to show an association between expectations and the second-generation advantage. Taken together, the pattern of generational differences and the sequence of casual relationships, although consistent with the optimism hypothesis, fail to account for the ethnic differences including the second-generation advantage pattern. Findings thus suggest that factors other than aspirations enable immigrants to overcome each successive educational hurdle.

To explain the remaining gaps among immigrant generations, Chapter 5 tested the segmented assimilation theory by introducing additional measures for the contextual

environment, interactions between immigrant generation and the environment, and parents' protective influences over their child's assimilation to the American society. Despite the more complex model specification that included the measures of socioeconomic background and family expectations from Chapter 4, generational differences between and within ethnic groups remained largely impervious to the added controls. In fact, the analyses showed that although several features of the segmented assimilation theory significantly affect the odds of college enrollment and completion, the ability of the theory to explain generational status differences was underwhelming given its complex specification.

Results for the segmented assimilation model substantiate the theory's emphasis of the contextual environment and the conversion of parental influences into children's educational mobility by way of significant others and children's own expectations. For instance, the contextual environment during adolescence as measured by family structure, secondary school environment, and neighborhood ethnic composition is clearly associated with college-going and completion. Findings fail to support, however, the foundational tenet that generational differences among immigrants are explained by or dependent on the students' structural background. In other words, disparities in educational attainment by ethno-generational status were independent of the local environment in which students grew up. As a result, interaction effects tested between ethno-generational groups and school-level poverty and ethnic composition students' neighborhood were removed from then model equations. Results for the remaining causal mechanisms proposed by the segmented theory reveal a number of important findings.

First, the pattern of results show that parents' protective influences and active promotion of their child selective assimilation may in fact result from the structural background of their national origins rather than that of the local environment. One of the theory's main contentions is that parents' protective influence over their child's acculturation is greatest in response to a disadvantaged environment. Having found no dependency of generational trajectories on the local environment, these interaction

effects were taken out. However, the results for college enrollment, especially for four-year college attendance, show that parents' attempts to limited their child's assimilation into the American mainstream mediates the advantage of second-generation Mexicans relative to their ethnic and white counterparts of the third and higher generations. Thus, instead of parents' protecting their children from negative influences in the *immediate* environment (measured as the school and neighborhood levels), findings here suggest that the hardships of immigrants' homelands may be equally as important. In the case of immigrants from Mexico, parents familiar with the impoverished conditions of their homeland may be more likely to keep their children away from distractions that would otherwise hinder school success. It is plausible too that second-generation youth are particularly susceptible to such diversionary activities (such as television and video games) given their greater familiarity with the English language and American culture compared to their 1.5-generation ethnic peers.

Second, while the test of optimism hypothesis in Chapter 4 highlighted the importance of parental and student's own educational expectations on the likelihood, findings for the segmented assimilation theory show that teacher and peer expectations also influence college-going behavior and college completion. Specifically, results of this investigation also show that net of parental expectations, significant others' expectations (peers' aspirations especially) are associated with an increase in students' odds of college enrollment and graduation. Moreover, the pattern of results in all three attainment models show a successive decline in the effect of parents' expectations where the introduction of significant others' beliefs measured in the 10^{th} grade diminish the effect for parents who were interviewed at grade 8. Student's own aspirations (also evaluated at grade 10) lessened the influence of both parents and significant others. This trend lends support to the theory's claim, and that of the status attainment perspective more generally, that parental expectations channel the types of significant others their child encounters and that both ultimately shape children's own educational aspirations.

Finally, results show, however, that only the introduction of youths' expectations account for generational differences in educational attainment, particularly

the odds advantage of any postsecondary school enrollment for second-generation white and Asian youth over their three-plus generation ethnic peers and intra-ethnic advantage among other (non-Mexican) Hispanics for four-year enrolment and bachelor's degree completion models. The importance of expectations over and above the other model inputs is more suggestive of the optimism theory than of the segmented assimilation theory investigation in this chapter.

Overall, findings from the test of segmented assimilation theory analysis had some interesting implications for theory and research on immigrant assimilation. To the extent that the analysis operationalized the structural and individual level factors that underlie the segmented assimilation theory (contextual dependence and selective assimilation), measured gaps in educational attainment between and within ethno-generational status groups remain mostly unexplained. In fact, even the addition of students' prior school achievement and ability to the model, while significant effects independently, failed to explain away any more of the generational disparities than that of the fully specified segment assimilation model. Although the contextual environment of the family, school, and neighborhood during adolescence is associated with postsecondary educational attainment, generational differences remained independent of the environmental influences. Results also fail to support the theory's claim that parents' protective influences mediate effects of the immediate structural conditions. However, evidence was found that parental influences account for the disadvantaged background of immigrant's ancestral homeland where measures of selective assimilation account for the net advantage in college enrollment for second-generation Mexicans relative to their three-plus generation ethnic peers and native whites. Though modest, the relationship found between parents invocation of selective assimilation and disadvantage national origins offers support for the segmented model. Further research is needed to understand what mechanisms influence such ethnically conditional adaption to the American environment beyond those measured by the reconciled model of immigrant incorporation.

Contributions to the Field

This dissertation project contributes both theoretically and empirically toward our understanding of immigrants' incorporation into one of main institutions of American society, higher education. At a theoretical level, this project advances an innovative model for understanding the immigrant assimilation experience by reconciling several popular theories of immigrant adaptation within a common conceptual framework. Previous studies on the incorporation of newcomers have frequently treated theories of assimilation as a medley of parenthetical statements, often set in opposition to the conventional assimilation theory and to one another, from which one is deemed as the superior account. Such an approach, driven mostly by the rapid accumulation of qualitative and quantitative data, has resulted in a hodgepodge of findings, both in support and against various descriptions of the immigrant experience, and stirred proposals of newer, more complex theoretical accounts that have proven difficult to evaluate empirically. Consequently, contemporary immigration theory remains rather murky as past and present theories are grounded on partial evidence. The danger, Portes (1997) warns, is that without a systematic guide as to what this mounting information means, our capacity to advance the field and provide a sound basis for both public understanding of immigration and policy development greatly diminishes.

This dissertation offers an approach for synthesizing three prevalent assimilation perspectives—straight-line assimilation, immigrant optimism hypothesis, and segmented assimilation theory—by unifying them within a status attainment perspective. The status attainment model provides a coherent conceptual framework for coordinating these theories, outlining the basic causal processes that facilitate the social and economic movement of individuals and for comparing progress both across and within generations. Moreover, the model is flexible enough to adjust to the multidimensionality of contemporary theories of assimilation, offering a platform with which overlay one theory upon another and thus generate testable propositions. Taken

together, the status attainment model is well positioned to evaluate whether generational status per se or other factors are responsible for whatever achievement differences are observed. More importantly, however, by organizing theories of assimilation within the status attainment framework, this body of research and future assimilation studies are able to hypothesize under which conditions generational status may matter and when its effects are attenuated.

Empirically, this project enhances our understanding of the socioeconomic adaptation of contemporary immigrants, primarily of Asian and Hispanic descent, by examining their experiences in postsecondary education. Given the recent arrival of late-twentieth-century immigrants and the fact that the majority of the second generation is made up of adolescents, much of the research on new immigrants has focused on their educational progress in primary and secondary schools. Only recently have second-generation immigrants begun to enter postsecondary institutions in large numbers. Thus, this project, guided by a status attainment translation of immigrant incorporation, builds upon our knowledge of contemporary immigrants' continued assimilation by examining the next stage of their adaptation: namely, access to and graduation from postsecondary institutions. The relative success of immigrants in postsecondary education will say much about their future economic trajectories.

However, monitoring the socioeconomic progress of immigrants by ethnic and generational status groups has long been a challenge for immigrant research, particularly the achievement of the children of immigrants (e.g., second generation) who serve as a barometer for the socioeconomic well-being of immigrating groups. Researchers have faced two major hurdles: The availability of measures necessary to decipher generational status (i.e., nativity and parentage) and acquiring a sample large enough to track achievements of national origin groups by generational status over time. The work in this dissertation project (specifically in Chapter 2) shows how pooling years of the March Current Population Survey (CPS), synchronized by the Integrated Public Use Microdata Series project (IPUMS) at the Minnesota Population Center, provides social researchers a powerful data source for studying generational differences

over the course of the twentieth century by national origins. While this study traced immigrants' educational progress across birth cohorts, the complement of variables measured in the CPS (including questions on income, work experience, household composition, marital status, and health insurance coverage) offers researchers wide range of assimilation outcomes with which to investigate.

Finally, my hope is that this work will spark other researchers to consider an integrative approach to testing theories of immigrant assimilation. As Portes (1997) points out, immigration research is a largely data-driven enterprise and theoretical considerations often receive only a cursory glance as theories are invoked, but not seriously examined. This dissertation has taken an important first step toward bringing theory back into the study of immigrant adaptation.

Future Research and Implications

The future of research on immigrants' incorporation into American society is bright. This dissertation has provided important insights into processes that affect a large swath of the American population. The extent to which immigrants are able to draw on their social and economic resources for attaining upward mobility remains an important question, particularly as we look to the educational system as the primary agent of socioeconomic incorporation. Continuing to understand the mechanisms that allow immigrants and their children to navigate successfully through postsecondary schooling is an important step in developing social policies that promote socioeconomic integration. Based on the work from this dissertation project, areas for future assimilation scholarship are discussed on three fronts; use of advanced statistical modeling techniques, building models that better reflect the assimilation experience, and bridging the gap between empirical findings and social policy.

From an empirical modeling standpoint, future studies may consider testing the proposed reconciled model of immigrant assimilation for each ethnic group individually. In this current body of work, all ethnic groups under investigation were

included in the same regression model. Consequently, the modeling strategy assumes the assimilation process is the same for all national origin groups. In truth, there are likely difference in the assimilation experience across racial/ethnic groups as both national origin differences and reception by the native U.S. population have implications for the rate and trajectory of incorporations. In fact, evidence found suggesting that second-generation immigrants of Mexican ancestry are more susceptible to parent's protective influence lends support to a segmented or ethnically conditional theory of adaptation to American society. Thus, a more realistic approach is to estimate statistical models separately for Hispanics and for Asians, assessing changes in generational status within each group.

However, because data rich enough to investigate generational differences are often of limited sample size, estimating separate ethnic models may not allow for many interaction parameters (e.g., interactions between generational status and the contextual environment). Observed in this dissertation project, for instance, interactions between ethno-generational groups and environment conditions, while failing to reach statistical significance, also place great strain on the integrity and stability of the statistical model for small subgroup sample sizes. If sample size was not a concern, the most fitting analytic approach for testing the dependency of immigrant assimilation on the contextual environment may be the use of multi-level or hierarchical linear models. Often applied when data are nested (e.g. children nested within families and families nested within neighborhoods), multi-level models enable researchers to examine individuals embedded within localities and, more importantly, how individual level effects (level 1 covariates) vary across locales (level 2). Applied to the study of immigrant assimilation, the effect or slope for immigrant generation (e.g., second-generation) would be allowed to vary by different neighborhood or school-level compositions. In this way, the effect of generational status on educational attainment is also being predicted by differences at the contextual level. Multi-levels model have gained increasing popularity as nested data sources and statistical software have become more available, yet few studies on the assimilation of immigrants have applied this technique.

In addition to employing advanced statistical methods, assimilation scholarship may also be extended by reformulating analytic models to better approximate conditions and mechanisms affecting the assimilation experience. Based on results from this project and of the reconciled model of immigrant assimilation, improvements to the model equation may arise from adding predictors for immigrants' homeland, alternative measures of the contextual environment, and parents' and student's knowledge of the postsecondary system. The recommendation that future research consider measures of immigrants' homeland conditions comes from the finding that immigrants from Mexico were more responsive to parents' protective influence than were immigrants of European and Asian ancestry. Although the segmented assimilation theory predicts selective assimilation occurs in response to disadvantaged conditions in the local environment (Portes and Zhou 1993), results from this analysis suggests that national origin differences may also be important.

A rich source of data on the social and economic conditions of receiving countries is the World Bank, which collects a wide range of measures for individual countries and regions spanning from 1960 to 2011.[54] Using data from the World Bank, for instance, researchers could augment existing datasets to capture national origin differences in gross domestic product (GDP), life expectancy at birth, primary grade completion rates, access to the internet, and many others. While country-level measures of the economy, health, education, infrastructure, and the environment are readily available, future research might also consider including individual-level measures of immigrants' homeland background, such as measures of employment, income, and schooling. Because immigrants are a select group, it is likely that circumstances of individuals are extraordinary compared to those of the non-immigrating population. Thus, future studies should consider immigrant homeland differences at both the individual and national level.

Beyond the circumstances of immigrants' country of birth, future research should also explore in greater depth conditions in the local environment. Research

[54] See http://data.worldbank.org/

studies, for instance, might consider other contextual measures at the family, school, and neighborhood levels than those captured in this analysis, which directly influence on college outcomes but failed to mediate generational differences. While a wide variety of measures are possible, prior research indicates the certain indicators, such as the birth order among siblings (Adams 1972; Blau and Duncan 1967), school spending and classroom size (Wenglinsky 1997), and at the neighborhood-level the percentage of high and low status residents (Ainsworth 2002; Ensminger, Lamkin and Jacobson 2008), are likely to influence educational outcomes. Moreover, because there is no agreed upon structural level that links the macro and micro dimensions of immigrant assimilation and educational achievement, researchers should also pursue other contextual environments not explored in the current study, such as the classroom, school district, and regional differences at the county or state level. In the study of labor market discrimination, for instance, Baron and Bielby (1980) pointed to the "firm" as the ideal intersection point between individuals and workplace organization and inequality. In studies of educational attainment, particularly the educational mobility of ethnic minorities, researchers have been less successful in reaching common ground.

A third suggested area of research for enhancing predictive models of immigrants educational assimilation is to include measures of parental and youth's knowledge of the post-secondary school system. Knowledge of the educational system is an expansion of the proposed integrated assimilation model and, in particular, the optimism hypothesis as interpreted by the path model diagramed in Figure E.1 in Appendix E and highlighted by red lines. Although not addressed by the optimism hypothesis and the super-achievement of the second-generation, a plausible hypothesis is that understanding of institutional systems is an extension of the assimilation process for which the second-generation is able to benefit due to their greater acculturation. For example, immigrant parents who have high expectations of their child's educational coupled with an understanding of the college admissions process, entrance exams such as the SAT, and financial aid are likely to pass that knowledge onto their child which in turn heightens their expectations for college enrollment.

It follows that immigrant parents with such knowledge of the U.S. postsecondary system, what Bourdieu (1997, 1986) and Bourdieu and Passeron (1977) described as cultural capital,[55] likely come from countries with similarly developed economies and educational infrastructures. In this way, knowledge may be passed directly from parent to child or perhaps from ethnic community to child. Thus, while not drawn in Figure D.1, it is also reasonable to hypothesize that significant others at school (e.g., teachers and school counselors) and in the neighborhood (e.g., peers and community leaders) contribute to student's knowledge of college opportunities and the sequence of steps necessary for admission. On the other hand, for parents and youth with little direct or indirect knowledge of the college admissions process, who otherwise 'don't know, what they don't know', going to college is an unlikely transition especially to a four-year institution which entails a more rigorous process.

Future studies on educational assimilation of immigrants should consider introducing measures for parental and youth understanding of the college admissions process. Although not explored as part of models evaluated in Chapters 4 and 5, the NELS:88/2000 data used for those analyses ask parents and students a variety of questions about financial aid for education beyond high school. Parents, for instance, were asked to mark *true*, *false*, or *we haven't thought this yet* to a series of questions about seeking outside assistance, incurring debt, possibility of their child receiving a scholarship, applying for financial aid, and if parents thought they could get enough money for their son or daughter to go to college. In contrast, students were asked questions about how important receiving financial aid would be for attending college, what they had done to learn about applying for financial aid (e.g., talked with teacher or guidance counselor, college representative, loan officer, or knowledgeable adult), and whether help at school was given for filling out financial forms, applications, and writing essays. Given the rising tuition costs of colleges and universities, financial assistance is becoming a critical factor in students' decisions to accept admission and

[55] Cultural capital refers to forms of knowledge, skills, education, and advantage that individuals possess, and which given them a higher status in society. Bourdieu describes social capital as an inherited property that parents pass along to their children by transmitting the attitudes and knowledge need to succeed in the educational system and beyond.

even finish their degree after enrollment. Understanding how ethnic and generational status groups differ in their knowledge and access to financial assistance may help to explain persistence differences in educational attainment among these groups.

Public policy can play a major role in encouraging positive assimilation outcomes and helping immigrants to navigate an educational system that will determine much of their long-term socioeconomic success. The analyses in this dissertation project, while not dealing directly with policy measures, offer a number of insights important for fostering an informed debate on the optimal public policies aimed to successfully integrate newcomers and raise the achievement levels of all youth. First, contrary to popular perceptions that immigrants from Mexico lack the capacities to fully assimilate to American society (or at rates similar to immigrants from Asia), results show they achieve educational incorporation at an exceptional rate with levels of schooling near those of the native population by the second-generation despite dramatically low rates among new arrivals. Moreover, the trajectory of assimilation among Mexican immigrants follows much the same path as older immigrants from South, Central, and Eastern Europe.

Thus, results of this analysis reveal a mismatch between popular perceptions of immigrants from Mexico and the empirical reality of their educational attainment. It is unclear, however, whether they are able to convert their education into occupational achievement and higher wages. In order to change public perceptions of immigration, especially from Mexico, greater dissemination of information on the socioeconomic progress of immigrants in the U.S. would be of great public benefit. Such an annual report, perhaps produced by the Federal government using *Current Population Survey* data analyzed in Chapter 2, could also aid in identifying needs for stronger anti-discrimination legislation and enforcement measures designed to protect immigrants from discriminatory practices in various markets, including higher education. Ultimately, the objective of this report would be to encourage tolerance through the propagation of information designed to help the natives reject racism, social exclusion, and discrimination on ethnic and racial grounds.

Another key research finding relevant for developing public policies that promote the integration of immigrant groups is that high expectations for social mobility (i.e., continuing education beyond high school) is an important factor for whether students enroll and complete college. As results from this project show, students' expectations for pursuing higher education, cultivated first from their parents' aspirations and later from their peers and teachers, has a direct effect on educational outcomes and as a mediator of generational differences (explain some of the second-generation advantage). The key, of course, is to raise the expectations of those who have few or no ambitions to go to college.

Federal legislation seeking to address deficiencies in the public education system is not new phenomenon. The *No Child Left Behind Act of 2001 (NCLB)*, which sought to raise educational standards and the quality of education of students of all backgrounds, was based on the premise that setting high standards and establishing measureable goals would improve individual outcomes in education. The Law's disaggregation requirements meant that not only did school and grade levels need to perform well, but ethnic/racial minorities and special needs groups (e.g., students with disabilities and student with limited English proficiency) also had to meet minimum requirements. By raising the expectations for every student and providing the means for students to reach those goals, the purpose of the legislation was to improve the educational outlook and aspiration of all children. Although the implementation and requirements of NCLB has its flaws (see, for example, Linn 2005; Linn, Baker and Betebenner 2002; Marion et al. 2002), the underlying intentions of the policy to raise expectations and student achievement is consistent with the positive educational outcomes found in this dissertation. Thus, as lawmakers consider renewing NCLB, the hope is that revisions to the provision will further elevate the expectations of students, parents, and teachers along with the means to realize their goals.

Moving beyond raised expectations and academic standards at the primary and secondary level, policies are needed to better prepare students for the college admissions process, especially among students whose parents are of lesser financial

means. Parents who attended and completed college, for instance, are likely to hand down specialized knowledge of the college-going procedures to their children including information on college opportunities, filling out applications, registering and preparing for entrance exams, and navigating financial aid options. Moreover, parents with financial resources may even opt to hire a college coach for advice on which colleges to consider, how students can distinguish themselves in their application, and prep courses for standardized tests. Of course, for students whose parents are unfamiliar with the college admissions process and have limited financial resources, schools are likely to be the primary source for guidance on the transition from high school to college. The onus, however, is often on the student to seek out advice from teachers or a guidance counselor. Because of large student-to-staff ratios in public schools and no formal transition program, students are unlikely to receive the same level of attention as from a knowledgeable parent or hired liaison.

If, as a nation, we are truly interested in raising the education levels of all children, then what is needed are policies that assist students in the college admissions process. Such a policy could implement a mandatory high school exit program as part of students' sophomore and senior year. For students interested in continuing onto college, instruction would be geared towards scholarship programs, lessons on writing college essays, filling out applications, standardized test preparation, and advice on financial assistance. For immigrants and ethnic minority students who are non-native English speakers, assistance might include instruction on the Test of English as a Foreign Language, which is required as part of the application to most four-year colleges and universities. Although students would be encouraged to consider college, non-college bound students could be given information on employment opportunities or assigned to internships. Ultimately, raising expectations for advancement and academic achievement is only sustainable if students believe it is possible achieve their goals. Without formalized channels to guide students to next stages of their education, the most vulnerable students (i.e., ethnic minorities and the poor) are likely to suffer in both their short-run school performance and long-term employment opportunities.

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Appendix A: IPUMS-CPS Respondent Count Tables

Table A.1. Total Unweighted Count of IPUMS-CPS Respondents by Birth Cohort and Survey Year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Before 1929	18564	17009	13808	13024	11863	11165	10374	9383	11177	10322	9323	8578	7687	6726	6062	5473	170538
1930-1934	5832	5699	4814	4903	4721	4663	4520	4215	5491	5183	4940	4866	4580	4497	4280	4048	77252
1935-1939	6218	6120	5254	5237	5225	5024	5028	4851	6564	6242	6106	5717	5392	5265	5207	4978	88428
1940-1944	7529	7543	6403	6313	6224	6104	6039	5767	7922	7831	7608	7371	7281	7041	6932	6903	110811
1945-1949	9613	9460	8000	8005	8002	7917	7946	7515	10802	10546	10381	9858	9587	9316	9290	9106	145344
1950-1954	11235	10986	9471	9372	9463	9483	9355	8884	14059	13852	13411	12662	12182	12097	11751	11446	179709
1955-1959	12401	12156	10667	10769	10599	10616	10575	10286	17637	17212	16687	15820	15311	14758	14465	14291	214250
1960-1964	12615	12607	10824	10752	10716	10678	10704	10281	18705	18518	18007	17214	16842	16446	16218	15943	227070
1965-1969	11030	10873	9417	9744	9667	9866	9937	9278	16559	16420	15942	16072	15917	15610	15455	15675	207462
1970-1974	9892	9892	8575	8757	8770	8697	9069	8820	14838	14894	14828	14969	14735	14588	14635	14738	190697
1975-1979	10065	9819	8438	8303	7904	7980	8275	8011	12413	12602	12373	12646	12786	13140	13193	13582	171530
1980-1984	11797	11538	10187	10117	9768	9500	9358	8685	13712	12775	12531	12399	12581	12423	12492	12877	182740
1985-1989	11979	11851	10180	10194	10274	10327	10190	9688	19524	18744	17481	15699	14477	13011	12277	12007	207903
1990-1994	12173	12060	10579	10536	10665	10795	10843	10326	19783	19815	19445	19231	19093	18199	17762	16981	238286
1995-1999	0	2029	3859	5828	7756	9509	9784	9356	18113	18112	17731	17771	17281	17468	17207	17102	188906
2000-2004	0	0	0	0	0	0	1713	3475	9920	13356	16447	16891	16798	16897	16809	16957	129263
2005-2009	0	0	0	0	0	0	0	0	0	0	0	2884	6032	9157	12369	15814	46256
Total	150943	149642	130476	131854	131617	132324	133710	128821	217219	216424	213241	210648	208562	206639	206404	207921	2776445

Table A.2. First Generation Unweighted Count of IPUMS-CPS Respondents by Birth Cohort and Survey Year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Before 1929	1439	1503	1252	1178	1092	1030	936	871	1064	1000	929	867	787	720	664	602	15934
1930-1934	484	549	459	503	474	456	484	443	602	566	539	479	505	500	503	492	8038
1935-1939	588	633	602	607	592	559	577	591	840	786	762	699	712	682	717	650	10597
1940-1944	722	766	742	795	751	706	710	682	974	959	904	820	847	834	898	910	13020
1945-1949	982	1069	919	935	931	894	926	911	1291	1250	1194	1195	1175	1164	1177	1191	17204
1950-1954	1111	1249	1139	1119	1131	1132	1154	1081	1650	1612	1549	1472	1510	1627	1593	1557	21686
1955-1959	1280	1479	1418	1417	1467	1390	1451	1469	2137	2136	2123	1998	2005	2006	1977	2039	27792
1960-1964	1427	1650	1562	1615	1641	1594	1689	1737	2583	2594	2652	2439	2533	2450	2417	2473	33056
1965-1969	1479	1636	1462	1650	1729	1803	1833	1802	2727	2763	2640	2674	2713	2827	2762	2819	35319
1970-1974	1104	1343	1244	1359	1468	1560	1722	1768	2645	2640	2710	2815	2878	2944	2959	3009	34168
1975-1979	688	851	876	1023	1024	1143	1388	1390	2123	2194	2269	2408	2574	2705	2814	2733	28203
1980-1984	526	579	607	637	670	744	929	1007	1571	1571	1762	1850	2125	2265	2311	2374	21528
1985-1989	351	478	469	480	499	470	620	721	1090	1223	1260	1270	1406	1517	1605	1588	15047
1990-1994	154	224	230	283	309	307	402	438	730	772	877	893	975	1012	1101	1113	9820
1995-1999	0	17	33	60	89	129	190	233	456	489	569	634	693	755	826	780	5953
2000-2004	0	0	0	0	0	0	10	33	102	175	246	319	360	445	476	499	2665
2005-2009	0	0	0	0	0	0	0	0	0	0	0	16	50	116	144	189	515
Total	12335	14026	13014	13661	13867	13917	15021	15177	22585	22730	22985	22848	23848	24569	24944	25018	300545

Table A.3. Second Generation Unweighted Count of IPUMS-CPS Respondents by Birth Cohort and Survey Year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Before 1929	3233	3566	3129	2845	2581	2245	2054	1897	2122	1993	1778	1531	1394	1241	1157	1041	33807
1930-1934	752	758	709	706	672	654	592	560	705	623	630	605	620	609	582	537	10314
1935-1939	587	633	524	527	546	503	474	447	622	586	521	511	466	445	488	431	8311
1940-1944	519	552	470	470	443	403	424	370	538	494	435	445	482	476	461	495	7477
1945-1949	489	544	443	474	458	418	404	377	511	524	533	488	481	499	521	521	7685
1950-1954	484	527	474	479	505	485	447	408	679	640	583	538	540	527	527	536	8379
1955-1959	563	571	531	534	559	495	480	460	738	694	714	657	640	598	604	612	9450
1960-1964	616	688	623	579	560	520	508	512	826	772	723	753	756	776	719	706	10637
1965-1969	593	648	596	624	591	594	539	526	834	829	721	768	778	748	797	803	10989
1970-1974	731	740	704	662	651	597	619	621	879	867	856	858	825	831	888	896	12225
1975-1979	944	1043	841	831	805	724	739	715	1009	1006	886	851	929	937	990	1043	14293
1980-1984	1322	1391	1289	1252	1255	1163	1125	1040	1343	1283	1184	1209	1223	1171	1177	1171	19598
1985-1989	1632	1704	1550	1487	1576	1497	1445	1419	2214	2131	2003	1800	1679	1540	1445	1456	26578
1990-1994	2123	2234	2043	1976	2029	2004	1987	1950	2901	2904	2790	2748	2749	2571	2397	2388	37794
1995-1999	0	418	846	1339	1753	2117	2140	2002	3074	3042	3053	2961	3039	2945	2835	2704	34268
2000-2004	0	0	0	0	0	0	375	782	1916	2649	3463	3380	3382	3457	3298	3249	25951
2005-2009	0	0	0	0	0	0	0	0	0	0	0	604	1306	2052	2793	3343	10098
Total	14588	16017	14772	14785	14984	14419	14352	14086	20911	21037	20873	20707	21289	21423	21679	21932	287854

Table A.4. Three-Plus Generation Unweighted Count of IPUMS-CPS Respondents by Birth Cohort and Survey Year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Before 1929	13611	11781	9400	8985	8179	7878	7367	6598	7964	7301	6604	6165	5499	4755	4235	3828	120150
1930-1934	4503	4346	3636	3685	3564	3545	3432	3199	4169	3976	3758	3764	3443	3382	3189	3019	58610
1935-1939	4947	4804	4117	4098	4076	3951	3969	3801	5076	4848	4806	4494	4204	4124	3993	3895	69203
1940-1944	6184	6155	5177	5039	5017	4984	4895	4703	6382	6350	6246	6096	5940	5718	5562	5497	89945
1945-1949	7966	7745	6615	6578	6600	6595	6603	6205	8959	8735	8616	8151	7913	7629	7579	7390	119879
1950-1954	9412	9092	7820	7756	7816	7846	7722	7357	11673	11556	11226	10610	10096	9926	9622	9347	148877
1955-1959	10291	9980	8697	8800	8555	8717	8608	8316	14700	14318	13776	13091	12608	12118	11858	11633	176066
1960-1964	10320	10124	8614	8543	8493	8546	8465	7975	15218	15069	14557	13955	13487	13177	13062	12760	182365
1965-1969	8761	8496	7332	7448	7331	7449	7501	6874	12901	12730	12505	12538	12349	11971	11865	12049	160100
1970-1974	7880	7747	6611	6720	6635	6522	6674	6355	11209	11279	11165	11214	10950	10745	10756	10829	143291
1975-1979	8329	7866	6702	6443	6071	6103	6107	5832	9188	9319	9131	9311	9214	9457	9364	9800	128237
1980-1984	9867	9524	8279	8217	7834	7587	7276	6591	10738	9871	9517	9271	9158	8952	8991	9332	141005
1985-1989	9929	9637	8152	8218	8193	8356	8106	7522	16171	15345	14157	12568	11344	9927	9208	8959	165792
1990-1994	9863	9586	8299	8269	8323	8483	8438	7920	16126	16099	15730	15552	15331	14597	14250	13480	190346
1995-1999	0	1592	2976	4427	5912	7261	7446	7104	14560	14549	14084	14149	13528	13755	13534	13618	148495
2000-2004	0	0	0	0	0	0	1327	2656	7898	10527	12726	13175	13044	12986	13029	13208	100576
2005-2009	0	0	0	0	0	0	0	0	0	0	0	2264	4675	6986	9428	12282	35635
Total	121863	118475	102427	103226	102599	103823	103936	99008	172932	171872	168604	166368	162783	160205	159525	160926	2178572

Table A.5. Missing Generation Unweighted Count of IPUMS-CPS Respondents by Birth Cohort and Survey Year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Before 1929	281	159	27	16	11	12	17	17	27	28	12	15	7	10	6	2	647
1930-1934	93	46	10	9	11	8	12	13	15	18	13	18	12	6	6	0	290
1935-1939	96	50	11	5	11	11	8	12	26	22	17	13	10	14	9	2	317
1940-1944	104	70	14	9	13	11	10	12	28	28	23	10	12	13	11	1	369
1945-1949	176	102	23	18	13	10	13	22	41	37	38	24	18	24	13	4	576
1950-1954	228	118	38	18	11	20	32	38	57	44	53	42	36	17	9	6	767
1955-1959	267	126	21	18	18	14	36	41	62	64	74	74	58	36	26	7	942
1960-1964	252	145	25	15	22	18	42	57	78	83	75	67	66	43	20	4	1012
1965-1969	197	93	27	22	16	20	64	76	97	98	76	92	77	64	31	4	1054
1970-1974	177	62	16	16	16	18	54	76	105	108	97	82	82	68	32	4	1013
1975-1979	104	59	19	6	4	10	41	74	93	83	87	76	69	41	25	6	797
1980-1984	82	44	12	11	9	6	28	47	60	50	68	69	75	35	13	0	609
1985-1989	67	32	9	9	6	4	19	26	49	45	61	61	48	27	19	4	486
1990-1994	33	16	7	8	4	1	16	18	26	40	48	38	38	19	14	0	326
1995-1999	0	2	4	2	2	2	8	17	23	32	25	27	21	13	12	0	190
2000-2004	0	0	0	0	0	0	1	4	4	5	12	17	12	9	6	1	71
2005-2009	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	0	8
Total	2157	1124	263	182	167	165	401	550	791	785	779	725	642	442	256	45	9474

Table A.6. Population Estimates From the Current Population Survey, 2000 Decennial Census, and American Community Survey

	Current Population Survey					Decennial Census	American Community Survey	
	1996-2009	1996	2009	2002	2003	2000	2002	2003
Male	49.0	48.9	49.1	48.9	48.9	49.0	48.9	48.9
Female	51.0	51.1	50.9	51.1	51.1	51.0	51.1	51.1
0 to 4 years	7.1	7.6	7.0	6.9	6.9	6.8	7.0	7.0
5 to 9 years	7.1	7.6	6.7	7.1	6.9	7.3	7.1	7.0
10 to 14 years	7.2	7.4	6.6	7.5	7.4	7.3	7.5	7.5
15 to 19 years	7.2	7.1	7.0	7.1	7.1	7.1	6.7	6.7
20 to 24 years	6.8	6.7	6.8	6.9	7.0	6.8	6.6	6.7
25 to 29 years	6.8	7.4	7.1	6.5	6.6	6.8	6.5	6.6
30 to 34 years	7.1	8.1	6.4	7.2	7.2	7.2	7.3	7.2
35 to 44 years	15.4	16.3	13.7	15.7	15.4	16.3	15.8	15.5
45 to 54 years	13.8	12.0	14.7	14.0	14.1	13.4	14.2	14.3
55 to 64 years	9.5	8.0	11.4	9.2	9.6	8.6	9.4	9.8
65 to 74 years	6.5	6.9	6.8	6.4	6.3	6.6	6.4	6.4
75 to 84 years	4.5	4.0	4.3	5.6	5.6	4.4	4.3	4.4
85 years and over	1.1	1.1	1.5	n.a.	n.a.	1.5	1.2	1.2
Median Age	35.0	33.0	36.0	35.0	35.0	35.3	35.9	36.0
Race/Ethnicity								
Non-Hispanic White	68.2	71.9	65.4	67.3	68.0	69.1	68.2	67.8
Non-Hispanic Black	12.3	12.5	12.1	12.2	12.1	12.0	11.8	11.9
American Indian/Alaskan Native	0.7	0.8	0.6	1.0	0.6	0.7	0.6	0.7
Asian/Pacific Islander	4.2	3.6	4.6	4.3	4.2	3.7	4.1	4.2
Hispanic (any race)	13.3	10.8	15.8	13.3	13.8	12.5	13.5	13.9
More than one race	0.8	n.a.	1.5	n.a	1.4	1.9	1.8	1.6
Missing	0.6	0.5	n.a.	1.9	n.a.	n.a.	n.a.	n.a.
Generational Status								
1st generation	11.0	9.1	12.2	11.2	11.3	11.1	11.8	11.9
2nd generation	10.1	10.4	10.5	10.1	10.0	n.a.	n.a.	n.a.
3rd plus generation	78.7	80.3	77.4	78.4	78.3	n.a.	n.a.	n.a.
Missing	0.2	0.2	0.0	0.3	0.4	n.a.	n.a.	n.a.
Native	88.8	90.7	87.8	88.5	88.3	88.9	88.2	88.1
Foreign-Born	11.0	9.1	12.2	11.2	11.3	11.1	11.8	11.9
Missing	0.2	0.2	0.0	0.3	0.4	n.a.	n.a.	n.a.
Total Population	282,948,542	264,314,164	301,482,827	282,081,971	285,933,410	281,421,906	280,540,330	282,909,885

n.a. = Not Applicable/Available

Appendix B: Measuring Immigrant Generation

Defining immigrant generations are commonly set according to whether parents and child are foreign-born or native-born. Among demographers and other social scientists, the term "first generation" refers to foreign-born residents (excluding those born abroad to U.S. parents). The place of birth, however, is the not only factor important for determining generational status. In fact, most scholars tend to agree that age of arrival into the host country is also an important factor, particularly for educational attainment (Glick and White 2003; Hirschman 2001). Introduction of sub-categories for first-generation immigrant by age of arrival is often attributed to the work of Ruben Rumbaut. For instance, Rumbaut classified immigrants who came to the host country between the ages of 13-17 as belonging to the 1.25 generation compared to the 1.0 generation immigrants who arrive after 18 years of age and spend their formative years abroad. The “1.5 generation” classification refers specifically to those immigrants who come into a country between the ages of 6-12 years of age.

Differentiating between first-generation immigrants by age of arrival is thought to reflect differences in the ease at which immigrants are able to adapt to the host country. Newcomers who arrive during late adolescences (e.g., 1.25 generation) are likely to have most of their formal schooling in their home country and unaccustomed to the English language and American culture. In most cases, these adolescents are likely to be in the early stages of adaptation. In contrast, immigrants who arrive before age 6 (1.75 generation) are likely to be proficient in English and obtain all of their education in the United States. For this group, memory of life in their home country, if any, will likely fade, as an American way of life will predominate. With greater exposure to American socialization, 1.75 generation more closely resemble second-generation immigrants who are U.S.-born to at least one foreign-born parent. The ease of incorporation for the 1.5 generation, arriving between 6 and 12 years of age, is likely to fall somewhere between the 1.25 and 1.75 generations.

Although U.S. Census Bureau’s Current Population Survey (CPS) data asks a question about immigrants’ date of arrival, the integrated set of CPS data published by

the Minnesota Population Center and used in this dissertation project assembles a broad categorical measure for arrival date, which is not precise enough to capture first-generation subgroups. Consequently, my analysis of educational trends among immigrant generations by national origin and birth year classify all foreign-born immigrants as first-generation regardless of age entry. Moreover, given the number of IPUMS-CPS respondents 25 years of age and older by birth cohort for the 1.0 generation in Table B.1, subdividing the group into four classifications is likely to produce rather modest sample sizes. As Table B.2 shows, the sample of first-generation immigrants is smaller yet when considering splits by national origin. In fact, the divisibility of the first-generation is often suppressed in studies seeking to examine differences by country of origin (see for instance, Farley and Alba 2002). Recall that this analysis is interested in participants over the age of 25 years, as most will have completed their education at that time.

Scholarly attention, however, has focused more heavily on the study of second-generation immigrants than on the rate of incorporation among first-generation immigrants. As the children of foreign-born parents, second generation outcomes are vital to the understanding of immigrant adaption and progress. The second generation is prominent in accounts of immigrant assimilation, in which socioeconomic outcomes such as educational attainment, earnings, and English language acquisition improve markedly between foreign-born and native-born children. As a focus of the present study, reports of the exceptional achievement of second-generation immigrants relative to their first generation and third and higher generation peers is particularly notable. Tracking the development of this so-called second-generation advantage is eased by the availability of data required to define the second-generation, namely child's and parents' place of birth. The IPUM-CPS data measures the country of origin of the respondent and both mother and father.

In most studies, respondents are identified as second-generation if they are U.S.-born child and have *at least* one foreign-born parent. Researchers, however, have recently begun to question whether those with one native-born parent and those with no

native-born parents should be grouped together, with evidence suggesting that there are significant differences in outcomes between "pure" and mixed parentage groups (Ramakrishnan 2004). U.S. born individuals with a mixed parentage of one foreign-born parent and one U.S.-born are referred to as the 2.5-generation (being half-way between the second and third generation). For generational purists such as Rumbaut, the 2.0-generation designation is reserved for U.S.-born residents who have two foreign-born parents.

As Table B.1 shows, the 2.5 generation is a numerically significant group with half of the IPUMS-CPS respondents typically classified as second-generation group being of mixed parentage (58,136) and half of pure foreign-born parentage (53,513). The numbers underlying the 2.0 generation, however, are driven by the prevalence of two foreign-born parents at the turn of the century (before 1929), whereas 2.5-generation respondents are the wide majority in most cohorts thereafter. While detailing the demographic fluctuations of the 2.0 and 2.5 generations is beyond of the scope of this paper, it plausible that globalization, and particularly the increased global reach of the U.S. both commercially and militarily, has lead to greater occurrences of marriage among of mixed parentage marriages over the course of the 20th century. As expected, the 3.0 plus generation is numerically the largest group, but also the least precise as the CPS does not collect national origin information beyond the respondent's parents. Thus, native-born respondents to native-born parents are lumped together in the three-plus generation and ethnic origins assigned from respondents' self-reported racial/ethnic identification.

Table B.1. IPUMS-CPS Respondents 25 Years of Age and Older by Immigrant Generation and Birth Year for Survey Years 1996-2009

Birth Year	1.0 Generation	2.0 Generation	2.5 Generation	3.0 Plus Generation
Before 1929	12,992	17,689	9,319	94,758
1930-1934	7,005	4,680	4,124	49,761
1935-1939	9,376	3,040	4,051	59,452
1940-1944	11,532	2,120	4,286	77,606
1945-1949	15,153	1,750	4,902	104,168
1950-1954	19,326	2,101	5,267	130,373
1955-1959	25,033	2,642	5,674	155,795
1960-1964	29,979	3,614	5,719	161,921
1965-1969	32,204	4,212	5,536	142,843
1970-1974	30,232	5,214	4,737	120,102
1975-1979	19,608	4,295	3,143	72,681
1980-1984	7,119	2,156	1,378	27,632
Total	219,559	53,513	58,136	1,197,092

Respondent counts in Table B.2 by national origin show that fracturing the second generation by pure and mixed foreign-born parentage generates much smaller subgroup sample sizes by birth year, although the 2.0 and 2.5 generations are generally large enough to investigate. The subgroup sample sizes by generation and birth cohort, of course, vary according to national origin groups and subsequent timing of groups' arrival. For instance, one of the earliest streams of mass immigration arriving before 1880 from Northern and Western Europe have relatively modest counts of a few hundred per cohort for respondents born in the early part of the century and less than 100 born after 1974. The next historical stream of immigration arriving between 1880 and early 1920s from Southern, Central, and Eastern Europe have more robust counts by birth cohorts with 2.0 and 2.5 generations with numbers well above 500 per birth cohorts for all but the youngest cohorts. For immigrants arriving from Asia and Mexico (and Latin American more generally), who are the newest influx of immigrants with a mass arrival beginning after 1965, respondent counts by birth cohorts are substantially greater for 1.0 generation than the 2.0 and 2.5 generations combined. Given their recent arrival and expected demographic presence of Asian and Mexican immigrants among the first generation, counts for the second generation of pure and mixed parentage are

relatively small with little more than 100 respondents per birth cohort. Thus, while the respondent pool of second-generation immigrants is sufficiently large for some national origin groups, tracing the educational trajectories for distinct 2.0- and 2.5-generation groups is more difficult, particularly for the most recent wave of immigrants from Asia and Latin America.

Nevertheless, the question remains as to whether educational outcomes are substantially different among second-generation subgroups and warrant separate analyses, even at an aggregate level. As trends in educational attainment in Tables B.3-B.5 show, the mixed 2.5-generation appears to be doing better than the pure 2.0-generation with educational attainments rates slightly higher as measured, respectively, by at least high school completion, some college, and college graduation with a bachelor's degree or better.[56] Differences are most pronounced for high school completion and enrolling in some college with disparities of 3 to 5 percentage points in most cases and as high as 7.5 percentage points. For attaining a bachelor's degree and higher, the advantage of mixed foreign-born parentage is evident among cohorts born at the turn of the 20th century and narrows to a net disadvantage among younger cohorts (a swing of +4 to -2 percentage points). Generally, these results are plausible and consistent with the theories of the assimilation that stress the transfer of resources (e.g., economic, social, and cultural capital) from parents to their children. It is possible that the relative success of the 2.5-mixed generation over their 2.0-generation derives from the dual advantages of having mixed parentage – ambition from the foreign-born parent and insider knowledge from the native-born parent. Thus, the 2.5 generation appears to enjoy *the best of both worlds*.

Yet, while there is an advantage for second-generation immigrants of mixed parentage over those who have two foreign-born parents, evidence of a second-generation edge (educational attainment advantage of 2nd generation immigrants relative to 1st and 3rd and higher generations) is present for both groups regardless of how the

[56] Among 2.5-generation immigrants of mixed parentage, there is a slight tendency of respondents who have a foreign-born mother to attain greater levels of education than those who have a foreign-born father. However, the advantage is too inconsistent across birth cohorts to make any definitive claims regarding the advantages of having a foreign-born mother over a father.

second-generation is split. For the purpose of this dissertation project, which seeks to explain differential rates of assimilation across generations, the presence of the second-generation edge pattern is of particular importance rather than the differences among second-generation subtypes. Moreover, the additional objective of tracing differences in the assimilation experience by nation origin groups requires that subgroup sample sizes (by origins, generation, and birth cohort) remain reasonably large. Thus, for reasons of parsimony and because of small sample size concerns, I chose to combine all second-generation types.

Table B.2. Count of IPUMS-CPS Respondents 25 years of Age and Older by Immigrant Generation, Birth Year, and National Origin

	North/West Europe			South, Central, Eastern Europe			3.0 Plus Generation	
Birth Year	1.0 Generation	2.0 Generation	2.5 Generation	1.0 Generation	2.0 Generation	2.5 Generation	Non-Hispanic White	Non-Hispanic Black
Before 1929	1,253	2,452	2,754	3,355	11,486	4,289	77,643	11,440
1930-1934	453	709	971	1,248	2,368	1,862	39,552	6,485
1935-1939	624	498	860	1,601	1,430	1,670	46,786	7,816
1940-1944	575	353	805	1,532	851	1,674	61,747	9,276
1945-1949	719	229	968	1,832	638	1,702	83,001	11,707
1950-1954	638	214	1,083	1,794	727	1,649	103,352	15,084
1955-1959	689	296	958	1,971	925	1,842	124,122	17,405
1960-1964	955	420	997	2,175	1,041	1,765	128,707	17,652
1965-1969	933	374	979	2,028	916	1,609	112,296	15,981
1970-1974	645	238	683	1,488	714	1,132	92,555	13,666
1975-1979	265	90	338	985	430	676	53,995	9,271
1980-1984	65	20	107	335	161	285	20,112	3,618
Total	7,814	5,893	11,503	20,344	21,687	20,155	943,868	139,401

	Asia/Pacific Islands				Mexico			
Birth Year	1.0 Generation	2.0 Generation	2.5 Generation	3.0 Plus Generation	1.0 Generation	2.0 Generation	2.5 Generation	3.0 Plus Generation
Before 1929	2,654	1,538	330	458	1,674	1,237	373	1,122
1930-1934	1,913	480	194	374	1,116	744	318	805
1935-1939	2,500	247	235	426	1,686	543	405	1,125
1940-1944	3,310	162	293	673	2,324	472	520	1,644
1945-1949	4,533	165	325	1,091	3,404	487	646	2,739
1950-1954	5,740	243	434	1,440	4,841	546	731	3,574
1955-1959	6,823	278	512	1,541	7,161	615	851	4,613
1960-1964	7,497	455	594	1,497	9,315	953	912	4,988
1965-1969	7,531	637	585	1,362	12,116	1,200	931	4,905
1970-1974	7,051	965	623	1,252	12,811	1,898	1,070	4,991
1975-1979	4,570	992	537	749	8,366	1,866	786	3,369
1980-1984	1,626	580	273	321	3,123	897	369	1,468
Total	55,748	6,742	4,935	11,184	67,937	11,458	7,912	35,343

Table B.3. Rates of At Least High School Completion for 2.0 and 2.5 Generation Immigrants by Birth Cohorts Age 25 years and Older

		2nd Generation			3rd Plus Generation		
Birth Year	1.0 & 1.5 Generation	2.0 Generation (both parents FB)	2.5 Generation (mixed parentage)	2.0 & 2.5 Generation	Non-Hispanic, White	Non-Hispanic, Black	3.0 plus Generation
Before 1929	53.34	66.97	74.48	69.44	72.23	41.51	68.21
1930-1934	58.10	80.11	83.97	81.88	79.46	55.96	75.68
1935-1939	62.53	82.66	85.52	84.26	83.40	60.81	79.49
1940-1944	66.98	86.81	90.75	89.45	88.11	71.23	85.16
1945-1949	69.97	87.48	93.73	92.09	91.99	79.22	89.62
1950-1954	69.27	89.00	94.16	92.66	93.81	83.69	91.76
1955-1959	70.20	91.55	93.46	92.83	93.28	85.63	91.50
1960-1964	70.06	91.44	93.71	92.81	92.84	86.71	91.20
1965-1969	68.71	92.24	93.35	92.86	93.63	88.59	92.07
1970-1974	67.76	91.00	93.06	91.95	94.02	88.76	92.40
1975-1979	67.80	89.01	93.45	90.80	93.85	88.02	92.05
1980-1984	67.73	89.75	92.34	90.71	93.82	87.20	91.82
Unweighted N	219,559	53,513	58,136	111,649	943,868	139,401	1,197,092

FB refers to foreign-born

Table B.4. Rates of At Least Some College for 2.0 and 2.5 Generation Immigrants by Birth Cohorts Age 25 years and Older

		2nd Generation			3rd Plus Generation		
Birth Year	1.0 & 1.5 Generation	2.0 Generation (both parents FB)	2.5 Generation (mixed parentage)	2.0 & 2.5 Generation	Non-Hispanic, White	Non-Hispanic, Black	3.0 plus Generation
Before 1929	27.03	28.61	35.92	31.01	35.33	17.46	33.05
1930-1934	31.79	39.88	46.22	42.79	39.74	26.62	37.66
1935-1939	35.14	43.95	50.41	47.57	43.30	29.11	40.84
1940-1944	41.16	53.82	59.05	57.33	50.48	34.33	47.95
1945-1949	44.86	61.24	66.43	65.07	59.72	43.03	57.05
1950-1954	45.63	64.97	68.65	67.58	62.27	47.16	59.59
1955-1959	45.72	65.19	65.62	65.47	59.37	46.63	56.91
1960-1964	46.28	65.16	67.75	66.73	58.48	47.36	56.08
1965-1969	44.88	70.09	68.15	69.01	62.04	48.53	59.01
1970-1974	44.09	67.97	69.79	68.81	65.56	50.83	62.11
1975-1979	42.88	65.71	68.10	66.67	65.82	50.52	62.05
1980-1984	41.47	64.98	69.78	66.77	66.34	48.08	61.63
Unweighted N	219,559	53,513	58,136	111,649	943,868	139,401	1,197,092

FB refers to foreign-born

Table B.5. Rates of At Least a Bachelor's Degree for 2.0 and 2.5 Generation Immigrants by Birth Cohorts Age 25 years and Older

		2nd Generation			3rd Plus Generation		
Birth Year	1.0 & 1.5 Generation	2.0 Generation (both parents FB)	2.5 Generation (mixed parentage)	2.0 & 2.5 Generation	Non-Hispanic, White	Non-Hispanic, Black	3.0 plus Generation
Before 1929	15.48	12.86	16.81	14.16	16.24	7.46	15.08
1930-1934	19.28	20.74	24.44	22.44	19.79	11.77	18.46
1935-1939	22.67	23.20	26.89	25.27	21.21	11.31	19.58
1940-1944	26.67	29.91	32.18	31.43	26.13	13.42	24.17
1945-1949	28.87	35.81	36.79	36.54	31.95	16.96	29.51
1950-1954	29.50	39.09	38.98	39.01	32.69	17.99	30.18
1955-1959	28.51	37.72	36.31	36.76	30.12	16.76	27.61
1960-1964	28.82	37.59	35.57	36.37	29.90	16.27	27.17
1965-1969	28.43	41.00	38.35	39.52	33.29	17.31	29.84
1970-1974	27.87	38.71	36.81	37.84	35.40	17.65	31.38
1975-1979	27.52	36.31	34.14	35.43	35.20	17.91	30.89
1980-1984	24.22	33.00	35.29	33.85	34.84	17.32	30.11
Unweighted N	219,559	53,513	58,136	111,649	943,868	139,401	1,197,092

FB refers to foreign-born

Appendix C: Conditional Probability Figures for School Transitions

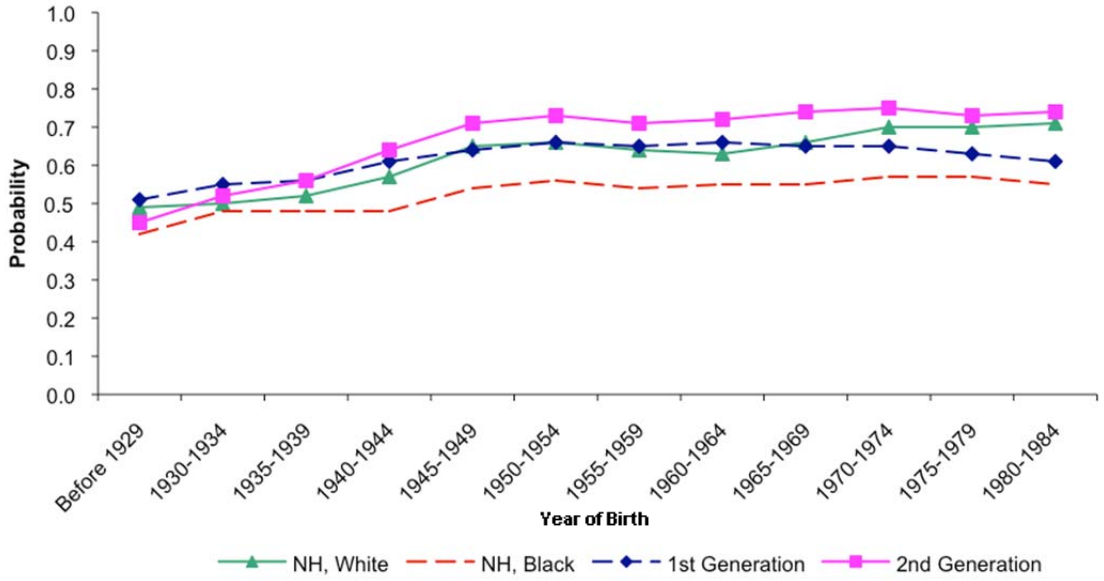

Figure C.1. Probability of Continuation from High School to Any College Enrollment by Generation

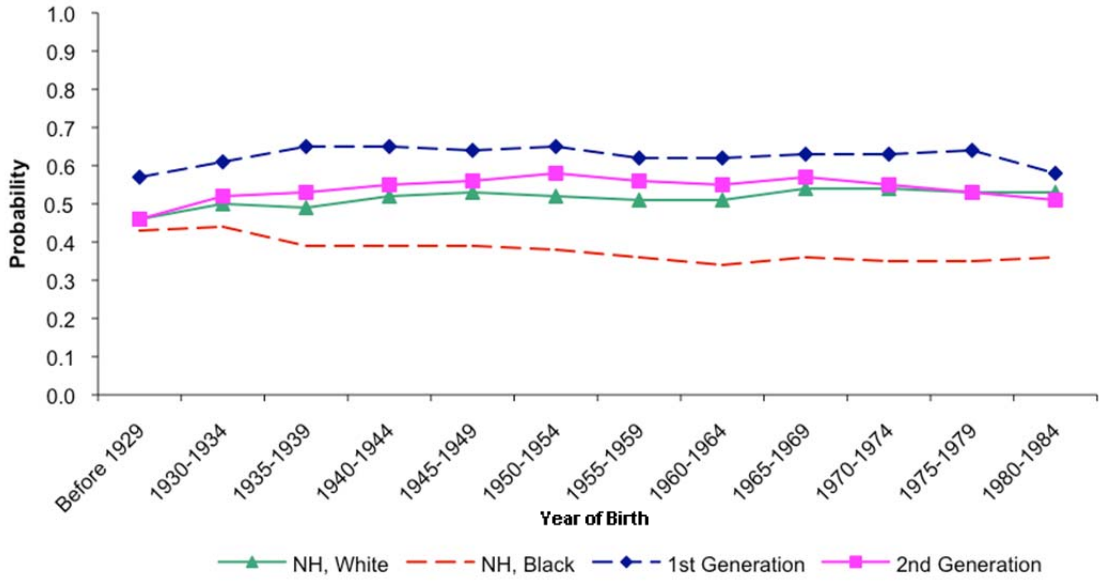

Figure C.2. Probability of Continuation from Any College Enrollment to Bachelor's Degree Completion by Generation

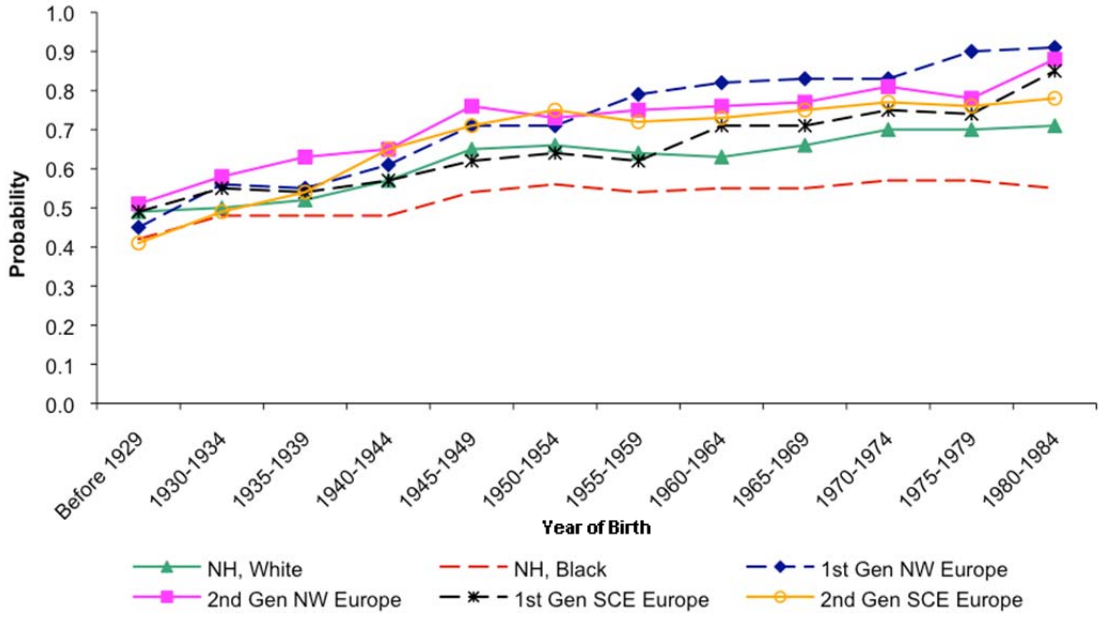

Figure C.3. European Immigrants' Probability of Continuation from High School to Any College Enrollment by Generation

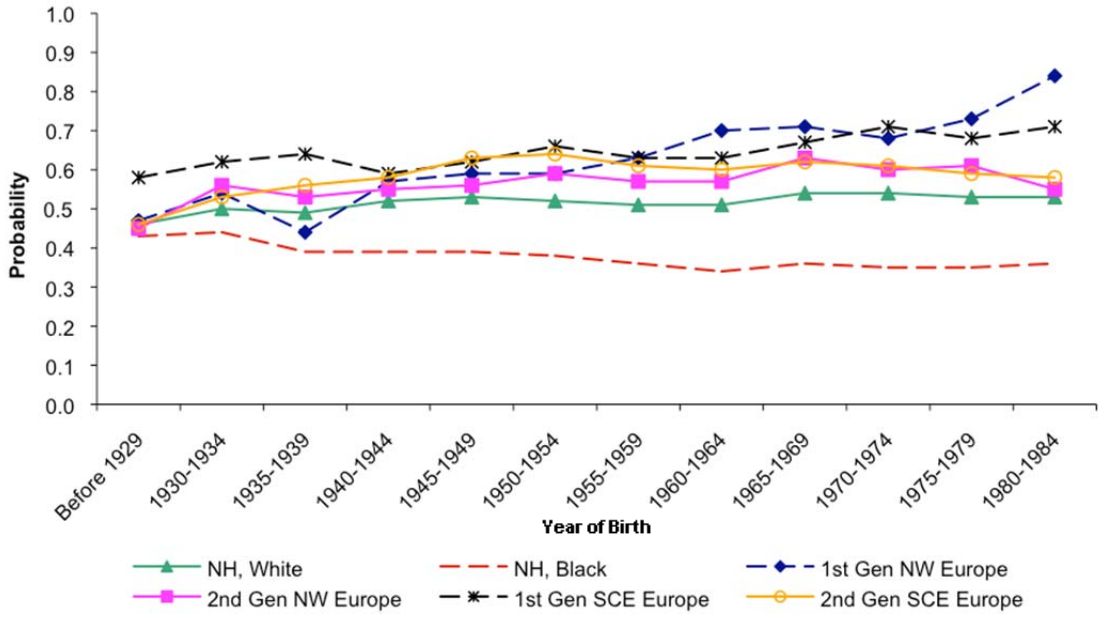

Figure C.4. European Immigrants' Probability of Continuation from Any College Enrollment to Bachelor's Degree Completion by Generation

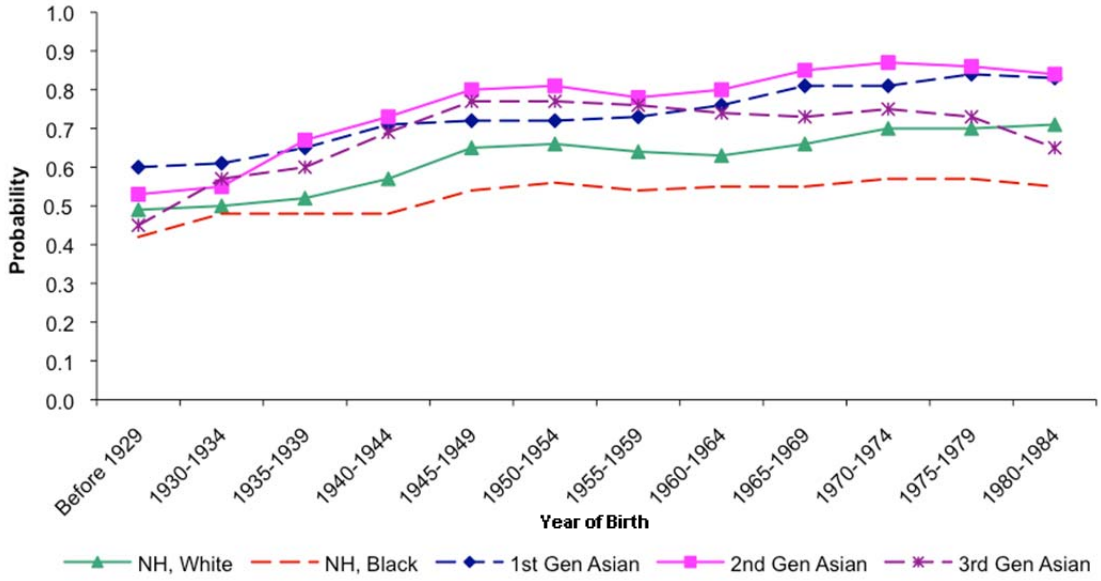

Figure C.5. Asian Immigrants' Probability of Continuation from High School to Any College Enrollment by Generation

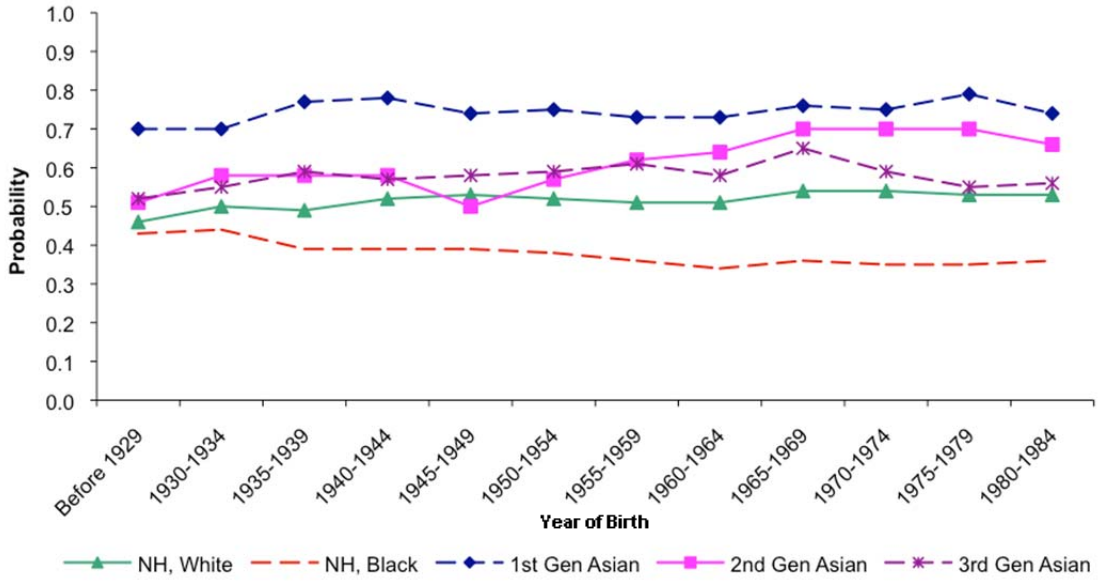

Figure C.6. Asian Immigrants' Probability of Continuation from Any College Enrollment to Bachelor's Degree Completion by Generation

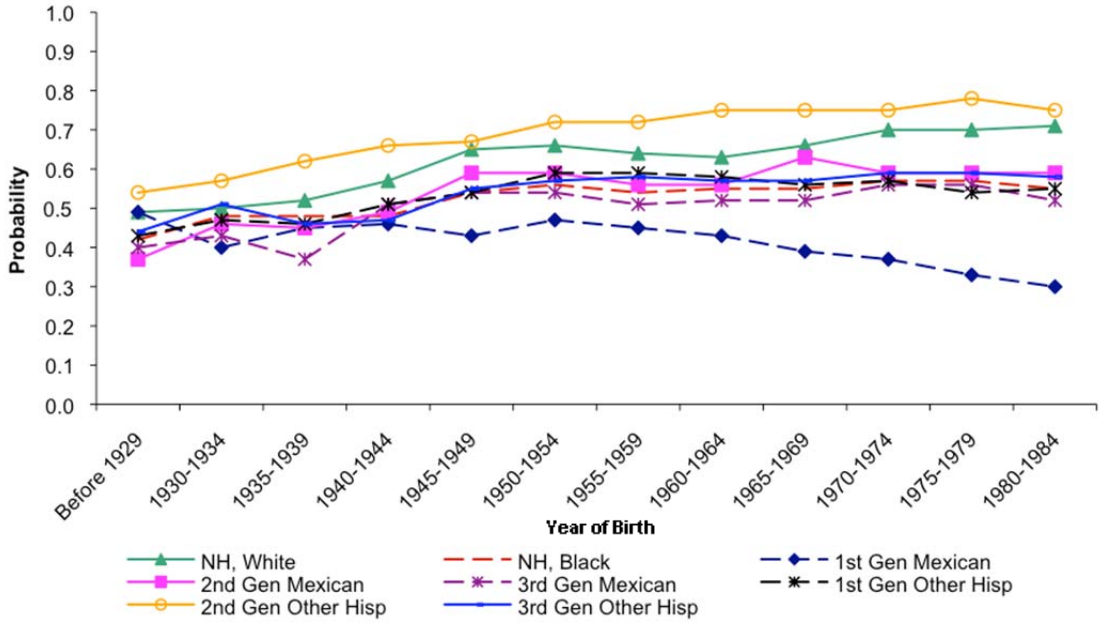

Figure C.7. Mexican and Other Latin American Immigrants' Probability of Continuation from High School to Any College Enrollment by Generation

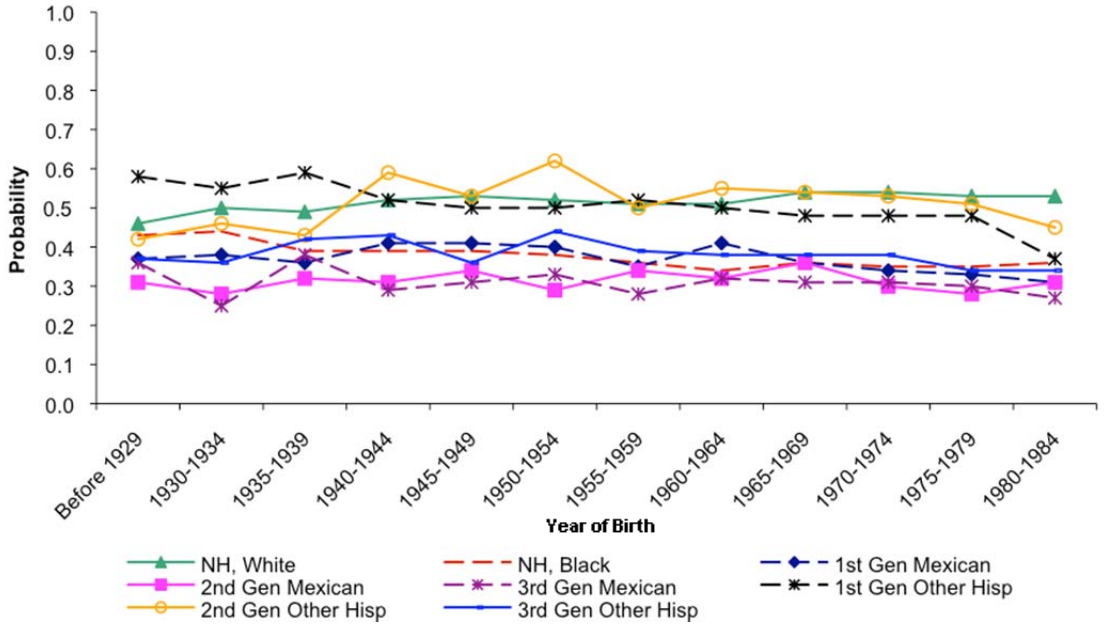

Figure C.8. Mexican and Other Latin American Immigrants' Probability of Continuation from Any College Enrollment to Bachelor's Degree Completion by Generation

Table D.1. Weighted Mean Educational Attainment for NELS:1988 Survey Sample and CPS 1973-1975 Birth Cohorts

	NELS Student Self-Reports in 2000					CPS (1973-75 Birth Cohorts)				
	Unweighted N	1994 HS Diploma/ Equivalent	Any College	Four-year College	Bachelor's plus	Unweighted N	HS Diploma/ Equivalent	Any College	Four-year College	Bachelor's plus
Ethno-Generational Origins										
Non-Hispanic White										
1.5 generation	71	91.19	86.27	71.52	52.72	1,070	94.48	72.55	n.a.	49.73
2nd generation	302	92.48	90.32	65.97	48.78	1,241	96.44	75.61	n.a.	46.79
3rd plus generation	6,884	89.69	78.65	54.86	34.22	43,475	94.24	65.82	n.a.	35.07
Missing generation	65	83.82	66.75	33.52	16.36	115	80.02	40.18	n.a.	27.69
Non-Hispanic Black										
1.5/2nd generation	59	96.33	97.37	78.57	35.84	517	95.82	74.58	n.a.	42.25
3rd plus generation	840	86.16	73.86	42.17	18.56	6,959	89.36	52.08	n.a.	17.37
Missing generation	16	84.75	84.75	74.10	2.83	100	89.24	61.44	n.a.	29.29
American Indian/Alaska Native	99	82.67	64.38	24.27	10.67	928	82.77	47.51	n.a.	15.70
Asian										
1.5 generation	338	90.30	88.19	72.53	49.67	3,711	94.16	78.27	n.a.	60.73
2nd generation	235	93.98	95.85	77.93	61.31	959	96.83	85.57	n.a.	62.42
3rd plus generation	109	95.77	82.10	47.49	25.73	611	96.14	70.31	n.a.	41.37
Missing generation	12	79.32	79.32	55.57	51.76	91	91.21	70.27	n.a.	47.08
Mexican										
1.5 generation	107	74.55	57.89	15.04	4.87	6,827	41.22	13.88	n.a.	4.64
2nd generation	305	77.27	67.98	31.15	13.69	1,714	82.01	48.37	n.a.	14.53
3rd plus generation	372	81.04	73.66	36.44	10.72	2528	82.34	47.16	n.a.	14.86
Missing generation	33	78.76	75.64	32.85	14.50	96	41.76	19.74	n.a.	7.22
Other Hispanic										
1.5/2nd generation	172	93.97	90.36	66.12	40.09	4,432	74.92	46.48	n.a.	22.51
3rd plus generation	135	85.21	79.03	43.68	25.33	690	90.21	58.43	n.a.	23.17
Missing generation	12	89.74	89.74	48.04	13.63	27	n.a.[1]	n.a.[1]	n.a.[1]	n.a.[1]
Puerto Rican	103	75.40	76.49	39.74	13.57	1,292	81.71	45.81	n.a.	15.71
Missing (total)	138	83.09	75.36	44.85	14.76	429	75.09	46.61	n.a.	26.99
Total Average		88.51	78.27	52.35	31.12		87.51	58.90	n.a.	30.68
Total N	10,269	10,264	10,263	10,204	10,175	77,383	77,383	77,383	n.a.	77,383

n.a. means not applicable

[1] Sample size is too small to reliably calculate

Appendix E: Expansion of Reconciled Assimilation Model

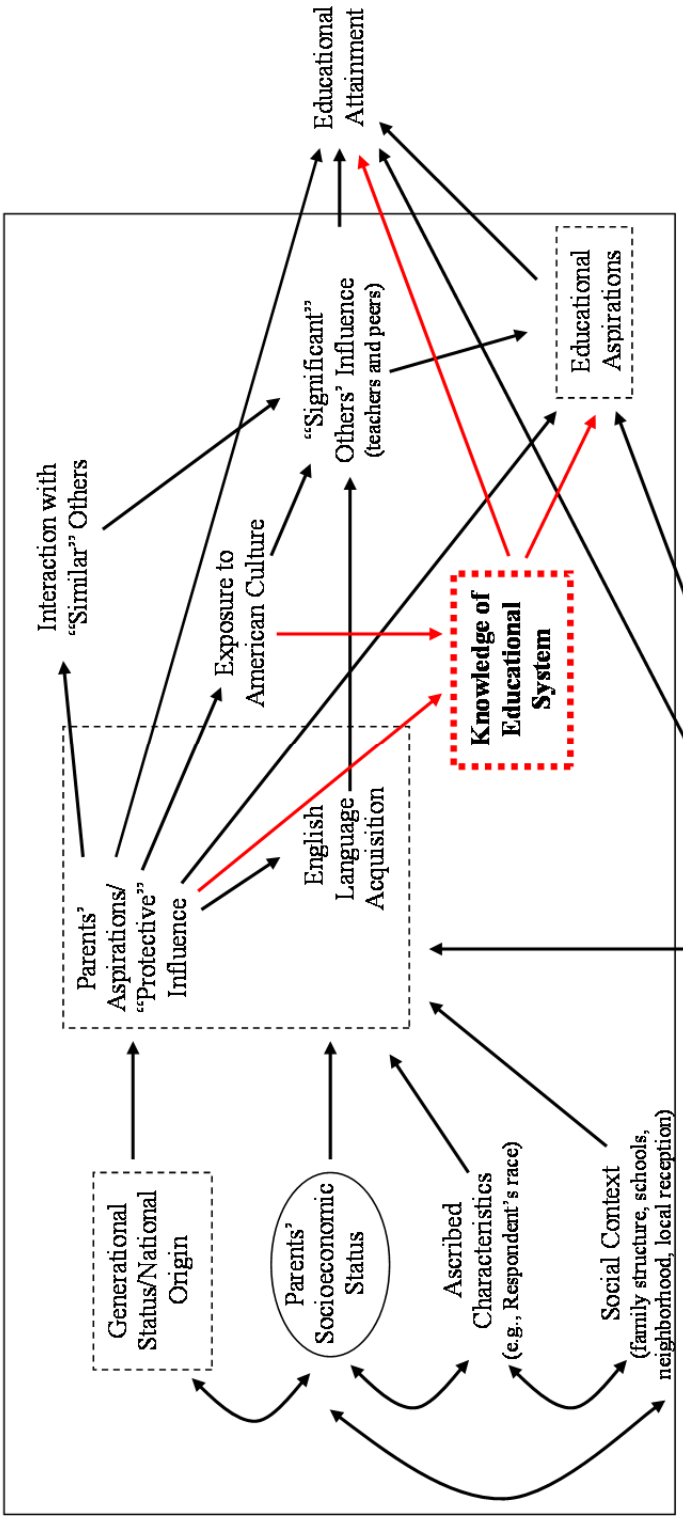

Figure E.1. Expanded Version of the Integrated Status Attainment Model of Immigrant Assimilation

VITA

Scott De Burgomaster was born in Rochester, New York on October 5, 1979. After graduating from Webster High School, he went on to the State University of New York at Geneseo where he studied and received Bachelor's of Arts degrees in Psychology and Sociology in May 2002. He moved to Seattle in September 2003 and entered Graduate School at the University of Washington to study sociology. Over the next several years, he would earn a Master of Arts in August 2006 and while working as a research assistant under Dan Goldhaber at the Center on Reinventing Public Education, co-authored a paper published in the April 2011 issue of Industrial & Labor Relations Review entitled, *Teacher Attitudes About Compensation Reform: Implications For Reform Implementation*. In August 2012, he earned a Doctor of Philosophy at the University of Washington in Sociology. Currently, he calls Charlotte, North Carolina his home along with his wife and three children, and works as a data scientist for the Advanced Analytics Lab at SAS Institute, Inc.